PNAAL-056

SEARCHING FOR BENEFITS

AID SPECIAL STUDY NO. 28

by

Peter Kilby and David D'Zmura
Wesleyan University

U.S. Agency for International Development

June 1985

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

FOREWORD

This paper is one of three sponsored by the Office of Private and Voluntary Cooperation, Bureau for Food for Peace and Voluntary Assistance (FVA/PVC) of the Agency for International Development (AID), on the role of private voluntary organizations (PVOs) and the development of small-scale enterprises. The papers and workshop report represent a collaborative effort of FVA/PVC and the Bureau for Science and Technology, Office of Rural and Institutional Development (S&T/RD). All are available from the Center for Development Information and Evaluation.

The other two papers are:

AID Program Evaluation Discussion Paper No. 22 (PN-AAL 053), Report on the Workshop on Private Voluntary Organizations and Small-Scale Enterprise Development, (Spring 1985) held on October 31 to November 2, 1983. This provides a summary of lessons learned from recent evaluations of PVO small-scale enterprise projects, brief summaries of two papers (this one and the one cited below) presented for the workshop discussions, and highlights of the workshop discussions and the list of participants.

AID Evaluation Special Study No. 27 (PN-AAL 055), Voluntary Organizations and the Promotion of Enterprise, (Spring 1985). This paper discusses some central issues of private voluntary organizations' activities relevant to small-scale enterprise development and provides a summary of what is known about where and how voluntary projects best promote small-scale enterprise development.

We are indebted to the authors of these papers for their contributions to AID's understanding of the role of small-scale enterprises in development.

W. Haven North
Associate Assistant Administrator
Center for Development Information
and Evaluation
Bureau for Program and Policy
Coordination
Agency for International Development

LIST OF TABLES AND FIGURES

Tables

Figure

ACKNOWLEDGMENTS

It is in the nature of a venture such as this that much of the human capital invested in the report was debt financed. The loan capital for the project descriptions was supplied by David Befus, Susan Goldmark, Judith Tendler, Jeffrey Ashe, Sheri Berenbach, Peter Frazier, and Cheryl Lassen. We made particularly heavy demands on David Befus and Oscar Chicas of the Honduras project. Many valuable comments were received from the participants in an AID workshop; Ashe, Goldmark, and Tendler were particularly helpful. On the complexity of measuring benefits, we have received wise advice from Dennis Anderson, Price Gittinger, Jack Upper, Stan Lebergott, J.D. von Pischke, T.M. Whitin, and Stephen Haggblade. Our greatest debt is to Carl Liedholm who, besides his contributions of empirical benchmark estimates, held our feet to the fire on the labor opportunity cost issue. Judy Gilmore and Ross Bigelow of AID were gracious taskmasters. Meta de Coquereaumont, of the MAXIMA Corporation, did an excellent job of editing our manuscript, taking our tables and text and putting them together in a consistent and more readily comprehensible form.

David D'Zmura began the project as a research assistant. He wrote early drafts of three project descriptions (PfP, UNO, FDR), was responsible for all drafts of the IDH and DDF descriptions, and applied the benefit-estimating conventions to the evaluation report data (done five times as the methodology went through successive refinements). In the case of the IDH evaluation report, there were no data; D'Zmura had to construct the impact analysis starting from scratch with the 69 questionnaires. By these extraordinary labors he earned his place as coauthor.

PREFACE

This report presents the results of an economic analysis applied to a sample of well-documented evaluation studies of private voluntary organization (PVO) projects to learn whatever broad lessons a comparative perspective might reveal. The heart of the venture is the construction of benefit estimates for each of the five projects. These are presented in Sections 3 to 7, along with a description of project design and implementation. For purposes of the comparative analysis, one of the projects (the Rural Development Fund--FDR--in Peru) chosen was not a PVO undertaking but was implemented in a more typical fashion by the Government-owned Industrial Bank of Peru.

For all those connected to development projects, benefit-cost analysis raises extreme anxiety for many reasons. Even under ideal circumstances, estimating benefits is necessarily arbitrary. Whereas those who execute projects are often over-optimistic about the good they do, outside evaluators working under severe time and data limitations usually omit certain classes of benefits that are indirect and hard to document. In the present case, not only are we relying on such outside evaluations, but we are applying a pioneering methodology that contains its own potential for error. Yet the calculation of a benefit-cost ratio creates the illusion of scientifically boiling down all the imponderables--economic benefits with long gestation periods, external spillovers at a second and third remove, equity considerations, the human process of participation, the creation of a sense of achievement and its attendant spur to social cohesion--into a single, ponderable "bottom-line" figure. Whether this figure is greater or less than one (that is, discounted benefits greater or less than discounted costs) (1) can lead to the expansion or termination of a class of projects, (2) can create a bureaucratic miniempire in Washington or erase the division altogether, and (3) can raise or lower the current status and future economic prospects of the executing PVO. So, although responsible assessment must go forward, the anxiety is not misplaced.

Acknowledging the extreme delicacy of the exercise is not to write down ex post benefit-cost analysis as our most powerful analytic tool for understanding what works and what does not in the field of development aid. There are those of the "social empowerment" school who argue that benefit measurement omits extremely important social gains that are inherently unmeasureable; for example, participation leads to improvement in the quality of poor peoples' lives. Some even use this type of argument in an aggressive fashion to assert that quantitative endeavors such as this should not be undertaken. No viable alternative is proffered. Although they are frequently trained

sociologists, the proponents seldom are able to establish unambiguously that the quality of life has improved independent of changes in income. One sees in these five cases and elsewhere that social mobilization can be sustained as long as it facilitates economic gain; where the new social activities do not yield material advantage they soon dissipate. While in some cases economically successful projects may have socially disruptive spillovers that moderate the net benefit, the reverse is not true. Failing projects provide neither the incentive nor the self-confidence to undertake new forms of social cooperation. Each is simply one more failure. Finally, with respect to the present undertaking, because identical measuring techniques are applied across all projects, the validity of the inferences drawn can be overturned only if the social effects are both strong and in opposite directions as between countries.

SUMMARY

This study examines five microenterprise lending projects, four of which were designed and implemented by private voluntary organizations (PVOs), to learn what in these assistance programs has worked and what has not. More concretely, we seek to explain the variance in performance among projects in terms of such "causal factors" as economic activities supported, location of project, presence of certain external factors (e.g., low inflation, high rate of gross national product growth), type of delivery system, extent of complementary technical assistance, and special uses of PVOs.

The standard of performance from which all conclusions derive is not related to such conventional norms as loan default levels or the economic viability of the project in terms of interest income coverage of administrative costs. Rather, the measuring rod is net economic benefits or additions to national income. This choice of measuring rod permits us to achieve two secondary objectives. First, we can compare the benefit-cost ratios of small-scale enterprise projects with aid programs in other sectors. Second, it provides us with an opportunity to develop a specially tailored approach to small enterprise, which might serve as a standard methodology for evaluating all such projects in the future.

Microenterprise establishments provide part- or full-time employment for a sizable fraction of the nonfarm labor force in most developing countries. These one- to five-person units are ubiquitous, found in town and village, and operate in the areas of services, transportation, manufacturing, and distribution. Using simple artisan technology, frequently operating in makeshift quarters with an investment ranging from a few hundred to a few thousand dollars, they provide a wide array of goods and services to the bulk of the nation's households. Because of their large numbers, relatively modest incomes, and lack of access to the normal pathways to scarce developmental resources, producers in this sector are attractive targets for an equity-oriented aid strategy. Because of their comparative ability to work with the poor and the unorganized, PVOs are well-suited to execute such projects.

A central feature of many microenterprises is that they represent but one of several commercial activities being pursued by the family household. The "family firm" might, for instance, be engaged in farm cultivation, trading, and artisan manufacturing. Because of the fungibility of capital and labor among the diversified activities of the family firm, the microenterprise survives. At the same time, this fungibility--particularly the diversion of loan finance to nondesignated uses--creates difficulties both for running loan schemes and for evaluating them.

The evaluation difficulties stem from a lack of recorded information among client firms and vaguely defined boundaries between family activities, on the one hand, and the severe problems of estimating those benefits arising from nondesignated uses of the funds, on the other.

In broad terms, the method of estimating benefits is as follows. For each of the five country projects--in Upper Volta, Brazil, Honduras, Dominican Republic, Peru--thorough field evaluation reports provide data for a sizable sample of client firms on increases in sales, profits, wages, and employment. Three sets of benefit estimates are constructed. The minimum estimate includes only the increase in value added (wages, profit, interest, rent) in the client firms, with a deduction for the opportunity cost of labor. The maximum estimate assumes lower opportunity costs in terms of foregone production elsewhere and induced production in supply firms and in firms catering to the new income-derivative consumer demand. Equity considerations are dealt with by weighting benefits accruing to the very poor by a factor of 1.5. The most likely estimate is constructed between these two polar extremes by factoring in judgments about probable biases in the data, the effects of external considerations (e.g., the influence of a new road, a balance of payments crisis), and other omitted variables.

One section is devoted to each of the projects (Sections 3 through 7). A description of project design and implementation is followed by a step-by-step construction of the three benefit estimates. Section 8 presents the comparative analysis and the lessons derived. The major findings are as follows:

1. All the projects enjoy an undiscounted benefit-cost percent ratio greater than unity, with four out of five internal rates of return above 100 percent. These rates of return place microenterprise lending schemes among the most successful categories of all types of foreign aid programs.

2. None of these projects is successful as measured in conventional terms of interest income covering administrative cost and capital erosion. Indeed, in only one case (Peru) does interest income fully cover administrative expenses. The lesson to be drawn is that self-sufficiency or project sustainability, although highly desirable, should not be equated with economic success, nor its absence with a failing project.

3. Among the five projects, those with extremely high performance levels obtain the bulk of their benefits from output response in the client firms. But for the moderately successful projects, a critical proportion of their benefits comes from unseen external economies--backward linkage, the final demand linkage, and consumer benefits. There is an important lesson for project design with respect to the first and third of these

external economies. Although very numerous, retail trade establishments normally create no new backward linkages; ceteris paribus, projects that exclude trading firms as clients will have a higher benefit-cost ratio. Consumer benefits resulting from competition-induced price reductions only occur where client firms constitute a significant proportion (say 20 percent) of the suppliers in the market in which they compete; ceteris paribus, projects situated in localized market areas will enjoy a higher benefit-cost ratio.

4. High rates of inflation are powerfully detrimental to project performance. In the great majority of instances where inflation exceeds 40 percent, government or PVOs are reluctant to set loan interest charges equal to the rate of inflation. Negative real interest rates impose a heavy cost in capital erosion and, at the same time, reduce measurable benefits by creating an incentive for the borrower to divert loan proceeds to nonproductive inflation hedges.

5. Small-scale enterprise loans produce benefits in periods of economic contraction and economic expansion, the benefits being larger in expansionary phases.

6. Concerning the loan delivery system, very simple systems are the most cost-effective and, by virtue of greater timeliness in disbursement, yield greater benefits to the borrower. Such simple systems involve relatively few visits, do not require extensive documentation of past business performance, and do not attempt an in-depth evaluation of the proposed use of funds. With respect to loan payback, strict policies of enforcing repayment are essential, including recourse to the law courts. Other incentives for prompt loan repayment include the prospect of repeat loans, loss of national consumer credit standing, and the use of collateral.

7. Despite the intuitive appeal of technical assistance as a means of strengthening the managerial and technical capacity of borrowers, the record in these projects and elsewhere is that such assistance does not reduce production costs or permit more rapid expansion for the vast majority of its recipients. On the other hand, by adding substantially to costs, technical assistance worsens the benefit-cost ratio.

8. While PVOs are not the only agency to design and implement successful microenterprise projects (e.g., FDR Peru, BKK Indonesia), they do possess several special attributes that give them a potential comparative advantage in this area: an ability to learn from past mistakes by virtue of continuity in the field, strong motivation to work at the local level with the poor and unorganized, a favorable perception by the client population, freedom from local political pressures, and a strong cost advantage with respect to both expatriate and local personnel.

1. THE MICROENTERPRISE SECTOR: AN OVERVIEW

The five projects examined in this report are designed to assist producers at the lower end of the small-scale enterprise sector. Variously described as micro- or informal enterprises, these units provide some form of employment for a sizable segment of the nonfarm labor force. Because of their large numbers, relatively modest incomes, and lack of access to the normal pathways to scarce developmental resources, producers in this sector are attractive targets for an equity-oriented aid strategy--if they can be reached.

Microenterprises are ubiquitous; found in town and village, they operate in the areas of services, transportation, manufacture, and distribution Using simple artisan technology, frequently operating in makeshift quarters, these one- to five-person units provide a wide array of goods and services to the bulk of the nation's households. Because these producers seldom have access to externally supplied inputs into the productive process--loan finance, imported capital and intermediate inputs, knowledge of improved techniques and managerial procedures--making good use of these deficiencies could lead to an expansion of income and output.

The range of enterprises covered in the projects in Upper Volta, Honduras, Dominican Republic, Brazil, and Peru may be taken as representative of the underdeveloped world at large. Table 1 gives selected attributes of both the firms and their owners for the five projects and for surveyed firms in four additional countries.

The table shows that the average number of people engaged per unit (including the owner) is between three and four, half of the units typically being one- or two-person units. Of the employees, about 80 percent receive a wage, with apprentices and family labor constituting the balance. Women make up about one-fifth of the population, both as employees and as owners. Average investment ranges from less than $200 to over $7,000. The primary reasons for the wide intercountry variance in all these averages are differences in (1) the industry mix of the sampled firms between countries, and (2) the incidence of ownership versus rental of land and building, in the case of investment.

There is greater commonality concerning the age of the entrepreneur and the level of monthly earnings. These units are not established by young men as a form of marginal employment while they search for high-paying jobs in the formal sector, but are permanent enterprises that yield a substantial income to their owners.

Table 1. Comparative Statistics on Microenterprise Establishments

Item	UNO/Recife Report 1982	DDR Report 1982		PfP/UV Report 1982	IIDI/IDH Report 1982	FDR/Peru Report 1982	Freetown, Sierra Leone ILO 1976	Kumasi Ghana ILO 1975	Manila Philippines ILO 1976	Jamaica MSU 1979
		Solidarity Component	Micro-enterprise Component							
Firms Surveyed	2,016	978	101	313	161	3,000	1,000	324	3,507	722
No. Engaged	3.1	1	3.2	3.0	5.5	6.2	1.9	4.5	3.2	2.2
Employees Receiving Wage (%)	78	--	80		75	80	54	94		
Employees Who Are Women (%)		--	11			18	16		21	32
Monthly Sales (US$)			1,871	617	2,709	1,077	129			
Total Investment (US$)		450	5,113	2,500			130	1,354	7,254	792
Characteristics of Owner										
Age		31	38		39		33	30	43	40
Years of Education		4	10				2.7		8	4
Women (%)	15	17	20	10	19	25	26		57	51
Monthly Earnings (US$)	183	261	212	150	387	352	88	272		
Those With Other Sources of Income (%)	22	9	29	55	46	30			13	

In terms of industrial organization, most microenterprises entail little division of labor or management organization and are based on widely existing technical knowledge, existing labor skills, and the use of existing raw material supplies. Production risks are few, barriers to entry are low, and competition can be intense as departing apprentices and employees set up their own units in the same industry. These traditional microenterprise activities can be contrasted with nontraditional ("modern"), small-scale industry, which is typically characterized by a greater degree of technological specialization, a formal management organization, and a lager scale of investment and employment (usually 10 or more employees). For these nontraditional enterprises, the knowledge, skill, and inputs do not already exist in the needed form, and therefore the risks of failure are high. Because there are barriers to entry with respect to both capital and knowledge, the number of producers are fewer and intra-industry competition is light.

The economic roles played by these two subsectors are very distinct. For a long time to come, the traditional subsector will provide more employment and income than the nontraditional subsector. Moreover, a larger share of the former's output will be fulfilling "basic needs"; that is, providing low-income consumer and producer goods for which there are no substitutes save at far higher prices. For its part, nontraditional enterprise will provide a much wider range of goods and will enjoy, from its small base, a faster growth rate. It also will be this subsector that ultimately furnishes the largest single source of indigenous entrepreneurs for large-scale industry, albeit the number of modern, small firms that grow up and out of the small-scale sector will constitute a minute percentage of the total population of such firms.

A central characteristic of the microenterprise establishment, excluding those in very large cities, is that the unit represents but one of several commercial activities being pursued by the family household. The "family firm" might be engaged in farm cultivation, trading, and an artisan craft. Labor and capital are shifted among the activities as family circumstances and comparative profitability alter over time. Thus we see in Table 1 that a significant fraction of the interviewed owners report other sources of income.

Because of the fungibility of capital and labor among the diversified activities of the family firm, the microenterprise survives. As discussed in Section 3, lending projects serving the traditional microenterprise sector enjoy a high level of benefits relative to projects serving modern small-scale enterprises. A major reason for this is the comparatively small portion of firms that fail. At the same time, this fungibility is the source of considerable frustration to those who would aid the sector. In contrast to lending to nontraditional, small industry

in which the financial flow is specific to that enterprise and its disposition is fully traceable, in the case of the microenterprise, boundaries separating other family activities are undefined, and the absence of written records provides a smokescreen for the actual use of the funds, which only the most energetic creditor can penetrate.

The problems of carrying out ex post evaluations of aid programs to microenterprise are no less daunting. The lack of recorded information and vaguely defined boundaries make data collection extremely difficult. At the same time, a good portion of the benefits--namely those accruing to the nontargeted family activities--are likely to be omitted from the count.

2. METHODOLOGY OF BENEFIT CALCULATION

In one way or another, the usefulness of any development project comes down to a judgment about the benefits created relative to their cost. The economic costs of a project consist primarily of out-of-pocket expenditures and usually are recognized easily. Economic benefits are more difficult to discern, because a portion of them is indirect and because they must be pruned of opportunity costs to arrive at a net figure. Economic benefits measured most generally are all net additions to the national income.

Intermediate indices of project success--sometimes given prominence in impact evaluations--include new employment, new firms, creation of additional productive capacity, and expanded industry sales. In all these cases, the additional income associated with the intermediate index is the true benefit; for example, employment without income is of little utility. Larger firms or more investment are only desirable to the degree that they generate more income.

In the aid programs being considered, loan funds and technical assistance are provided to small-scale enterprise producers to enable them to increase their sales. What the effect of increased sales will be on national income depends on (1) the size of the sales increase, (2) the degree of unused capacity in the firms that supply the small enterprises and in the firms catering to consumer demand deriving from the income generated by the project, and (3) the opportunity cost of the additional factors of production used by all of the affected firms--mainly labor and imported inputs--that must be netted out.

In advanced economies, similar lending and technical assistance projects involving banks and consulting firms have an automatic benefit-cost index, namely their rate of return on capital employed. With all costs and benefits internalized in the firm and with the profit rate measuring the excess of benefits over costs, there would be no need for such arduous calculations. Can credit and technical assistance agencies in developing countries be judged on the same basis? If the institution cannot cover its own costs, can we safely assume that social costs exceed social benefits? Although social costs may well exceed social benefits, we cannot be sure. Conditions in most developing countries deviate so widely from the conditions of the fully integrated, competitive market economy that "private profitability" cannot be taken as a reliable index of "social profitability."

What are these deviations from the model market economy that make benefit-cost calculations necessary? Why might a money-losing credit institution be socially profitable? First, most developing countries are not full-employment economies, both in the sense that there is extensive underemployed labor and that many producers--almost all small-scale producers and some portion of large-scale producers--have demand-related excess capacity. Second, external economies are more prevalent in developing countries; for instance, a successful lending project in a localized economy often results in an increase in competition and price reductions to consumers (a benefit the firm cannot capture). Third, because of imperfect markets and extensive government intervention, the prices of products and factors of production often do not reflect their true scarcities; overvalued wage rates and undervalued foreign exchange are two such distortions that tend to understate the social profitability of small-scale enterprises producing tradable goods.

The main purpose of social benefit-cost analysis is to recalculate all costs and benefits using the true scarcity prices that would obtain in a distortion-free, competitive economy.

We now can state concretely how benefits are measured. Defining value added in any firm as gross output less purchased inputs from other firms, we can see that the value added within the individual firm is equal to wages, rent, interest, and profit. Thus value added is equal to the income of the four factors of production. The increase in value added as a result of the project will overstate the benefit if the new employees left a previous job and were not replaced or were replaced by less productive workers. An appropriate subtraction is required for the lost output ("opportunity cost of labor").

Beyond direct value added, there are two indirect benefits in the form of value added generated in firms outside the project. First, the purchased input component of sales of client firms is a benefit to the extent that these materials are produced within the country and that they are new production rather than sales diverted from other customers. This is termed "backward linkage." Second, a portion of the direct factor income will be spent on consumer goods and services from producers who have unused capacity. This is termed "final demand linkage."

A simple example may be helpful to illustrate these three major elements of the aggregate benefit. Consider a single-client firm; for example, a carpentry shop. Before the loan, monthly sales of this three-person firm were $150, of which $60 went to purchased inputs (lumber, nails, glue), $25 went as wages to a journeyman, with a residual $65 "profit." This last is apportioned as follows: (1) an unknown amount in-kind to an

apprentice, (2) an implicit wage to the entrepreneur, and (3) a return to his capital and risk taking. As a result of the new orders financed by the loan, sales rise to $250 and a new apprentice is taken on. Of the incremental sales of $100, purchased inputs absorb $40.

Benefits are as follows: incremental wages = $0; incremental profits = $60; new employment = one apprentice; total direct value added = $60. With respect to the backward linkage to firms outside the project that results from the $40 of new raw material purchases, we assume that 40 percent represents the opportunity cost of labor and foreign exchange content. Thus the net backward linkage is 60 percent of $40 = $24. Regarding the final demand linkage to firms outside the project, we assume that the additional profit income will be spent and that one-third of it will go to domestic producers of consumer goods and services who have excess capacity. If we allow a 40-percent opportunity cost as before, the net final demand linkage is 20 percent of $60 = $12. The aggregate of direct and indirect benefits now comes to $60 + $24 + $12 = $96.

Figure 1 illustrates the above case in more detail, showing how the linkage effects interact over subsequent rounds of expenditures. The $100 of new sales financed by the loan in Round I gives rise to value added in the client firm of $60 and then in subsequent rounds another $56.24 sales, of which $33.75 is value added.[1] Note that the truncated method used in the text yields a higher figure ($96) than the more precise expansion ($93.75) displayed in Figure 1. This is true even though the expansion picks up higher order income effects; that is, the indirect income created by both the backward linkage and final demand linkage gives rise to yet further income effects. The explanation is that in the expansion there is a 40-percent opportunity cost deducted from the backward linkage at every stage.[2]

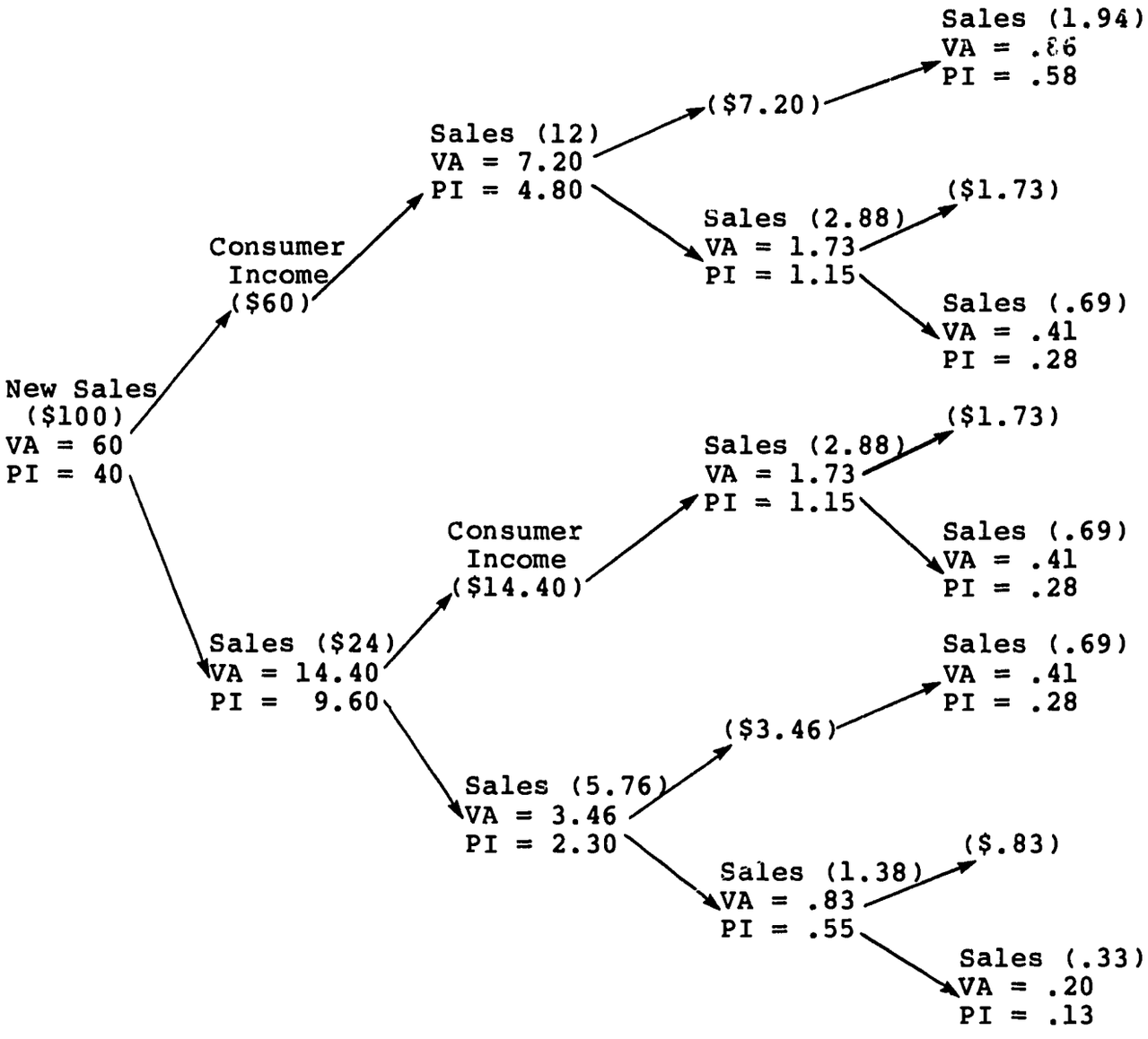
Although other benefit components are also measured--training, price reduction, diversion benefits, and weighted wages for

---

[1]The $60 of value added in the client firm must be adjusted for the opportunity cost of the new apprentice, perhaps half the journeyman's wage of $25.

[2]This outcome depends on the relative shares of value added and the purchased inputs in sales. As the share of VA rises and PI falls, the income effects are enlarged and the backward linkage opportunity costs are diminished. When VA/sales = 66.6 percent, the two methods give identical results; for all higher VA proportions, the expansion method produces a higher benefit.

Figure 1. Project Benefits:
Direct and Indirect Value Added



VA = 60 + 14.40 + 10.66 + 4.29 + 2.29

VA = .6 sales; PI = .4 sales.
Backward linkage = .6 purchased inputs = .24 sales.
Final demand linkage = .2 value added = .12 sales.
Total Sales = 100 + .36(100) + $.36^2$(100)...= 100/1-.36 = $156.25.
Total Value Added = $156.25 x .6 = $93.75.

the very poor--normally, the increase in sales is central in determining the level of aggregate benefits. Given the size of the opportunity costs we assume, only in rare cases does the sum of direct and indirect value added exceed the increment in sales.

Thus the sales response of the client firms is the focus for estimating project benefits. This naturally leads to the question of causality. Is it legitimate to attribute an observed increase in sales over a 2- or 3-year period solely to the receipt of a loan? Taking the polar case, could it not be that the same increase in sales would have occurred without the loan? Some event or combination of events--a new road, rising consumer income, a reduction in supply (rise in price) of formal sector goods--raises the profitability of production, which induces the entrepreneur to cut back on family consumption (increased savings) or divert capital from another use to finance the expansion of output. One way to test this would be to use a control group, taking the differential increase (or decrease) in sales as being attributable to the loan.[3] But does this do the trick? If capital was diverted from another use, that other (invisible) income was lost to the control group but not to the loan recipients. If it was financed by a sudden spurt in savings, the control group suffered a reduction in its real economic welfare. Equally, loan recipients may be diverting a portion of their loan to nondesignated uses, perhaps uses with a higher value-added payoff, all of which goes unreported. For all of these reasons, use of a conventional control group will underestimate the net benefit of loan finance.

The proportion of the sales increase that results from the receipt of the loan, as well as the extent of benefits from loan diversion, is a matter that must be determined by a close reading of each case.

Another thorny issue is the opportunity cost of labor. It is common wisdom that there is substantial unemployment in both the village and the urban economy of high birth rate poor countries: a new job in microenterprise reduces the number of unemployed on a one-to-one basis. It is the wisdom of economic theory that human ingenuity and competitive labor markets abhor unemployment: a new job in microenterprise reduces output elsewhere in the informal sector or the household economy. In the

---

[3]We used control groups in the two instances where they existed. As a general rule, control groups are not an available choice. Firms only cooperate with those who demand sensitive information if it is a precondition for a loan or technical assistance. Except under unusual circumstances, entrepreneurs will not agree to serve as a control group.

first case the opportunity cost of labor is zero, in the second it is somewhere near the going wage rate in the informal sector. A review of empirical studies supports two limited generalizations: (1) during the peak agricultural season the opportunity cost of labor is well reflected in the rural wage rate, and (2) male heads of microenterprise typically have job opportunities elsewhere. For the rest, albeit each case will vary with local circumstances, we believe the applicable mechanism is that of a "ladder of job step-up." This approach holds that the job vacated by the new microenterprise employee is taken over by someone previously engaged in a less productive activity, and so on down the ladder until the final person is vacating a state very close to pure unemployment.

And now to the immediate application. The evaluation reports contain some statistics for all client enterprises and detailed data (including sales, purchased inputs, some measure of profits, wages, and type of employees) from a roughly representative sample of the entire population. The basic technique for applying a uniform set of estimating principles to five unique situations where not only opportunity cost and linkage coefficients may vary but where there are issues of data reliability--respondent ignorance, intentional misreporting, nonrandom samples, a range rather than a single reported figure--is to construct two polar benefit estimates, a minimum and a maximum.

In the minimum case, in the absence of information to the contrary, we apply the following conventions:

1. The lower end of all range estimates is the actual figure.

2. No firms or jobs are saved as a result of the loans and assistance.

3. All labor is treated as having an opportunity cost equal to the wage rate.

4. There are training benefits equal to half the journeyman wage rate for each apprentice.[4]

5. Net backward and final demand linkages are zero.

6. Consumer benefits from price reductions or price increases prevented are zero.

---

[4]We assume that the apprentice's "wage" is composed of in-kind payments equal to half the wage rate and a training benefit equal to the other half.

7. There are no benefits from loan diversion.

In the maximum benefit case we make the following set of assumptions in the absence of information to the contrary:

1. The upper end of all range estimates is the actual figure.

2. Firms and jobs are saved equal to the differential reduction of firms and jobs in the control sample.

3. Only the entrepreneur is treated as having opportunity cost.

4. There are training benefits equal to half the journeyman wage rate for each apprentice.

5. A premium of 50 percent is added to the wage payments (including apprentice in-kind income calculated at half the wage rate) as a benefit of improved distribution of income.

6. Net final demand linkages are equal to 20 percent of direct value added.

7. Net backward linkages are equal to 70 percent of purchased inputs, exclusive of those purchases attributable to retail trading firms.[5]

8. Consumer benefits are equal to the initial quantity times the price reduction, plus the additional output, times half the price reduction.[6]

9. There is a diversion benefit.

---

[5]We assume that the expansion of trading firms does not normally lead to higher national retail sales but to a displacement of less efficient forms of distribution. The new set of backward linkages is roughly offset by the disappearance of another set somewhere else. This is not to suggest that providing assistance to retail or wholesale traders might not be highly beneficial on other grounds (e.g., opening up previously isolated market areas, as a channel of credit to low-income consumers, or as a prelude to going into manufacturing).

[6]In theory, the price reduction on the initial quantity is merely a redistribution of income from the producer to the consumer, not an additional benefit to the system. In practice, the evaluation reports only tell us the actual change in profits, given that the price reduction has in fact occurred, so the gain in real income from lower prices is properly counted as a benefit.

There are several conventions for handling missing information, which are common to both the worst and the best cases. It is assumed that there are 300 working days in the year. One-half of loans in default for 12 months or more are treated as unrecoverable, and hence are added to project costs. Finally, we treat the timing issue uniformly. We infer from the evaluator's report that the average firm is in the program for (say) 1.5 years, and we are told that there was new employment of 1,500 and an increase in annual profits of $500,000. We do not assume that these magnitudes were reached on the first day of the program and, hence, can be multiplied by the number of years in the program. Rather, we assume that they commenced at zero on the average borrower's first day and rose at a uniform rate attaining the reported magnitude on the day of the evaluation; we take the value at the midpoint of the time interval. Thus, in the example above, the project gave rise to (1) incremental person-years of employment of 1.5 average-years-in-program x 1,500 x .5 time adjustment = 1,125, and (2) incremental profits of 1.5 x $500,000 x .5 = $375,000.

Having constructed our minimum and maximum estimates, we proceed to fix a "most likely" intermediate estimate for each benefit subcomponent. Here we bring into play everything we know about the economy (e.g., unemployment levels, the ratio of intermedite good imports to GDP, movements in consumer income), all the internal evidence from the evaluation report, and the personal opinions of those with direct knowledge of the project to make fine judgments about apportioning causality and about the size of the linkages. The sum of these subcomponents is the overall final benefit measure of the project.

Compared to benefits, calculating costs is very simple. They include all administrative expenditures, bad debt, and capital erosion. No charge is made for cost of funds, as indeed the projects are not so charged; it is, however, implicit in the judgment on the adequacy of the project's internal rate of return. Capital erosion is the shortfall of the effective interest rate below the rate of inflation. Where it occurs, it is an income transfer from the lender to the borrower and will be reflected in higher benefits. The offsetting debit is a cost borne by the lender, which must be covered to maintain a financial portfolio that does not diminish in real terms.

The particular form of benefit-cost calculation to be used for this comparative study is the internal rate of return. Alternative measures--net present worth, benefit-cost ratio, net benefit-investment ratio--entail applying a discount rate that reflects the opportunity cost of capital. Even if an accurate figure could be determined for each of the five countries, different time discounts between countries would partially obscure

the lessons that a standardized measure can disclose. The internal rate of return, analogous to the yield on a bond, enables direct comparisons to be made and allows for individual situational judgments.

Looking from a distance at the benefit-cost estimates that come out of this process, what can be said about the likely bias of the results? On the side of overestimation, there is clearly substantial uncertainty about the magnitude of displacement effects and resource opportunity costs. Although we believe we have been very conservative in constructing our conventions, we may not have been conservative enough. Where it is an important component of the total, the benefits from loan diversion are arbitrary in the extreme. Also, the cost figures are surely too low: early investigation and preplanning costs of most projects are not reported, nor are ad hoc outside contributions received by the PVOs; shared overheads often are not taken fully into account.

Against these upward biases, we can place a somewhat longer list of downward biases, which tend to restore confidence in our calculations, or at least in the absence of any tilt toward favorable results. First, there is the nigh-universal intentional underreporting of sales by tax-fearing entrepreneurs; in the one case where data were available to estimate this figure (Peru), it was 40 percent. Hence there is a systematic bias to underestimate direct and indirect value added. Again, all these countries have overvalued domestic currencies, and because the import content of small-scale enterprise output is substantially less than that of the goods for which they substitute, the direct and indirect value added, measured by "border prices," is understated. Third, most of these projects are only 3 to 5 years old so that the high fixed costs of startup and of learning from early mistakes tend to inflate the administrative expenditure per dollar lent relative to its long-term level. Fourth, the .5 time adjustment convention clearly understates the speed with which working capital loans take their effect--again, benefits are too low. Finally, in the two cases where price reductions are important, the benefit figure is understated because it omits the increases in efficiency that are forced on nonassisted firms selling the same products and the consumer surplus enjoyed by their customers.

In sum, while benefit-cost estimates derived by our method are subject to a considerable degree of uncertainty, there is as much reason to believe they are too low as to believe they are too high.

A final word about the future use of this type of methodology for estimating benefits. Where one is not limited to reanalysis of completed survey data, it is possible to improve the

reliability of benefit measurement by entering a few additional items into the survey instrument and by conducting a few interviews with nonassisted firms. Areas where the margin of error can be greatly reduced include the .5 time adjustment, the opportunity cost deductions for both backward linkages and final demand linkages, undervalued foreign exchange, the diversion benefit, and influence of omitted variables.

Questions to be included in the survey of assisted enterprises include the following: What were sales 6 months and 12 months after receiving the loan? What was the wage of the most recently hired worker in his or her previous job? What job did the last worker who left go to and what was the wage? What job did the last departing apprentice go to and what was the wage? What proportion of purchased inputs were imported items? What other developments have affected sales in addition to the receipt of the loan?

Nonassisted competitors' firms should be questioned concerning the trend in their sales and their knowledge of any specifics of loan diversion engaged in by their more fortunate brothers. Brief interviews with a few producers in each of four or five product lines that figure prominently in backward linkages (e.g., lumber, sheetmetal, printed cloth) will yield answers on the extent of excess capacity and the import content of these products. Similar interviews can be held with some of the consumer goods producers (e.g., shoes, beer, bicycles). Additional information on final demand linkages can be gleaned from rural household expenditure surveys. Some idea of the degree of underpricing of foreign exchange can be obtained by ascertaining the black market exchange rate.[7]

---

[7]A computational note: As will be seen in subsequent sections, our reanalysis of the field evaluation data has required several thousand calculations. The figures have been checked and reckecked, and we are confident that whatever clerical errors remain are in the fourth (4th) or fifth (5th) digit, representing a possible error of less than 1 percent.

3. THE PARTNERSHIP FOR PRODUCTIVITY (PfP) PROJECT IN UPPER VOLTA[8]

Upper Volta, a small, landlocked country of 6 million, is ranked among the world's 25 least developed countries. Agriculture and livestock sustain 80 percent of the population and account for 40 percent of gross domestic product (GDP) and 90 percent of official exports. The country, however, is not self-sufficient in food; between 1977 and 1980, 160 tons of food aid were received. Many Voltaics emigrate to coastal countries because of pressure on the land and lack of economic opportunities at home.

The Partnership for Productivity (PfP) project in question is located in the Eastern Region, an area of 50,000 square kilometers and some 420,000 inhabitants living in 645 villages. Only 8 percent of the primary school-age population is in school. On the edge of the Sahel desert, this area receives no rain for 8 months and uncontrollable rain for 4 months. Forty percent of the villages do not have year-round water. The Region possesses only 368 kilometers of all-weather roads, 157 private cars, and 35 private vans. One hundred eighty of the villages have marketplaces, which handle transactions primarily in agricultural produce and local crafts. A 1980 sample survey indicated the existence of 12,000 small-scale enterprises, employing 21,000 people part- or full-time in agricultural processing, weaving, dyeing, pottery making, blacksmithing, tailoring, welding, carpentry, and leather working. The PfP project was directed primarily to this group of nonfarm enterprises.

The PfP project was begun in September 1977 with two expatriates located in Fada N'Gourma, an administrative and marketing center and one of the largest villages in the region (population 8,000), and in Diapaga (population 3,500), the center of an agricultural district bordering on Niger and Benin. The project design was for these two individuals to experiment with different types of credit funds and technical assistance to discover within 2 years those programs that could most effectively promote the development of self-sustaining small enterprises. These programs were to be pursued in a Phase II project. Within this overall

---

[8]Based primarily on the evaluation report by Susan Goldmark, Timothy Mooney, and Jay Rosengard, Aid to Entrepreneurs: An Evaluation of the Partnership for Productivity Project in Upper Volta (Washington, D.C.: Development Alternatives, Inc., June 1982).

assignment, a wide variety of subtasks were specified, including "determining a viable and effective means for motivating entrepreneurs," identifying new entrepreneurial opportunities, and "installing and testing at least one market infrastructure improvement to assess its impact on increased market trade and to determine its replicability on a commercial basis."

A $32,000 revolving credit fund and a $50,000 experimental grant fund were written into the project. Although the program anticipated improving the business practices in 80 firms and disbursing 40 loans (20 for new enterprises), the project did not aim to create just another credit system. The two funds were to be distinct, both in loan purpose and loan financing. Credit was to be granted through the revolving fund for conventional enterprises, using proven technologies in established economic sectors. The experimental fund was to finance innovative, high-risk ventures. Credit approval through this fund was to be based on the "potential demonstration effect of the profitability of a new methodology or technology." This assistance was to take the form of grants or interest-free loans.

3.1 Project Implementation

Two PfP expatriate staff members arrived in Diapaga and Fada N'Gourma in September 1977, with instructions to follow a process design. In accordance with this mandate, each was free during Phase I to develop the management structure that he deemed necessary. This characterized the relationship between field and base throughout the 1978-1981 period, as PfP/Washington provided little supervision or feedback on administrative procedures so as not to impose restrictions on the field staff. The several field visits that PfP/Washington staff did make, although valuable from a morale viewpoint, were not used to assist in the designing of an appropriate management information and evaluation system. Similarly, PfP/Washington did not undertake any management or financial audits during the 4-year period.

Neither the general manager of the program, stationed in Fada, nor the operations manager in Diapaga had training or prior experience in controlling or monitoring a credit scheme.[9] Consequently, the project's management information system emerged

---

[9]The General Manager (BA in government, MA in economics from the University of Lund) had served 6 years with PfP, including 3 years in Liberia. The Operations Manager in Diapaga (BA in history, Gettysburg College) worked for a decade in the Peace Corps as a health officer in various African countries.

through trial and error. In addition to the difficulties in developing an efficient record-keeping system for the lending operations, the advisers were not familiar with any system for collecting baseline data or tracking the performance of assisted enterprises. Thus, the evaluation of the experiments comprising Phase I was guided more than might reasonably have been expected by subjective personal judgment rather than documented outcomes.

The lending operations in Fada were not closely supervised. While the adviser was preoccupied with directing his experimental fund activities, a dearth of incoming data on his area's revolving credit fund kept him ignorant of its decapitalization. In Diapaga, efforts to develop procedures for tracking loan applications and the progress of loan repayments were made; also, technical and managerial assistance were given to clients. There was no time left for collecting the longitudinal information on activities necessary to gauge impact costs and the changing status of the pilot project.

Essentially, the project shifted focus from promoting new self-sustaining enterprises to providing credit to small-scale economic activities. The field staff soon recognized that the original requirements of enterprise sustainability placed a sharp limit on the pool of potential clients. In general, profitability and sustainability of specialized enterprises were only subsidiary concerns of established familial business, which were typically engaged in several activities. This, combined with the constraints on business expansion of the region's infrastructure and consumer purchasing power, swayed the staff to support sporadic small-scale activities. As a result of this change in lending orientation, the total loans given increased tenfold. Indeed, by the end of Phase I, the expatriate advisers' main activities were managing their staffs as they analyzed applications and collected payments.

There were several other modifications in project operations. With respect to lending, the revolving credit and experimental funds were commingled and the total funding raised to $107,000. Although within the first year of Phase I the entire $50,000 of the experimental fund had been drawn down, the total spent on experimental fund activities over 4 years was only $23,248. The hiring of local staff was not provided for in the original proposal. As early as November 1978, the Diapaga adviser had added a Voltaic associate and by October 1981 a total of five Voltaics had been hired in Diapaga and Fada. The Phase I project's timeframe also was changed, with three extensions pushing the terminal date from December 1979 to September 1981.

Let us consider the project's three main planned activities more closely. In the case of lending for traditional types of activities, formal loan criteria had been worked out by June

1978. Eligibility had three components: (1) that the proposed project be profit making, and hence, self-sustaining; (2) that the project contribute to the economic and social welfare of the area; and (3) that it emphasize increased productivity and self-sufficiency of the area. The required documentation consisted of a loan application, a balance sheet, a profit/loss statement, and an analysis of the loan's effect on income and costs. In the case of new enterprises, detailed statements of investment needs, projected monthly income, and costs also were stipulated. Collateral was not required. Regarding the ratio of the loan to the total investment, the applicant was to contribute a minimum of 20 percent. An annual interest rate of 10 percent was to be charged, with the repayment terms established at the adviser's discretion. There were to be no restrictions on repeat loans, save for the borrower's previous repayment record.

What did the evaluation team find 3 years later? In regard to documentation, they found that both managers had abandoned the profit/loss statements, that the required 20-percent client equity contribution had almost never materialized, and, in Fada, that the selection of clients had been reduced to an instinctual process, as interview notes and balance sheets were seldom used. The last situation peaked in July 1981 when the Diapaga manager replaced the Fada manager, who left on sabbatical, and discovered the Fada repayment records in disarray. After several months of hard work, these books were reconstructed.

No formal criteria were developed for, and few written records were kept of, the $50,000 experimental fund. Pioneer ventures--in particular small dams, wells, fencing, and agricultural projects--were a major interest of the Fada adviser.

Two of these agricultural enterprises, the Ninjala Dam and the Tiparga Experimental Farm, provide an interesting contrast between single-input or "missing ingredient" projects and integrated multi-input ventures. Ninjala is a village of 800 inhabitants located about 15 miles from Fada in a barren terrain accessible only by motorbike path; it has no year-round water. PfP provided 3 tons of cement and a skilled mason, and the villagers provided the labor to construct, in 3 weeks, a dam across a seasonally filled waterway. The result is a permanent lake supplying, among other things, water for the villagers and their 2,000 cattle. The commercial value of the latter's weight gain alone is 30 times the cost of the cement.

The Tiparga Demonstration Farm, PfP's largest project, involved supplying Tiparga village with a rented bulldozer, mechanical shovel, and tractor (plus fencing, tools, seed) to transform 17 acres of uncultivated bottomland into rice and vegetable plots, with beekeeping and grazing as dry season uses. In return

for land preparation and overall coordination, the 12 participating families agreed to hand over one-third of their harvest to PfP. With three good seasons and participants paying only one-tenth of their output, the project has been very successful for the villagers, with aggregate profits at CFAF 400,000. Ironically, although the social rate of return is negative when PfP's losses are factored in (CFAF 1.5 million), this uneconomic project is the prototype for a major component of the Phase II activities. In this important instance the negative findings of the experimental Phase I are being ignored.

With respect to technical assistance, PfP initially attempted to teach many of the traditional management control functions, such as elementary bookkeeping, inventory control, monthly balance sheets, and profit/loss statements. After a period, the training content was narrowed to two areas: general business planning and working capital management.

3.2 Project Impact

Starting in September 1978, 416 loans with a value of $275,000 and an interest rate of 10 percent were made to 313 clients. Repeat loans totaled 103, or 25 percent of all loans. Twenty-one clients received three or four loans. The average client was thought to be in the program 1.6 years. Average loan maturity was 1 year. Diapaga issued 222 loans totaling $127,793, while Fada issued 194 loans valued at $149,076. In addition, 12 disbursements from the experimental fund totaled $23,248 and were made primarily in Fada ($20,911).

The total life-of-project costs came to $515,411, which AID covered as part of its matching grants program. These costs are broken down in Table 2.

As of September 1981, repayment was on schedule for 77 percent of the outstanding loans, with the repayment rate in Fada at 50 percent. Most of the delinquent loans were overdue by more than 6 months. This recovery rate, however, compares very favorably with the 25-percent figure in the Government's ORD credit program for village agricultural groups. The evaluation team estimated that about 9 percent of PfP's outstanding loans were unrecoverable. In terms of value, the Fada credit fund was 30-percent delinquent, with 16-percent delinquency in the Diapaga fund. This difference in repayment rates probably is due to more frequent visitation of clients by the Diapaga staff as well as to the rescheduling of 10 to 15 percent of the Diapaga loans. The Fada staff pursued neither option. Of the $23,248 disbursed for experimental activities, $3,402, or 15 percent, was recovered.

Table 2. Total Life-of-Project Costs for PfP/Upper Volta

Direct Costs	Actual Expenses (US$)	(%)
Expatriate Staff		
Personnel	165,557	32.1
Benefits	17,803	3.5
Housing	51,463	10.0
1/4 of Vehicles	15,012	2.9
Local Staff	31,191	6.1
3/4 of Vehicles Plus Office	63,849	12.4
Other Overhead	170,536	33.1
Total	$515,411	100[a]

[a]Total does not equal 100 percent because of rounding.

Much can be learned from the PfP experience with delinquency. As in other credit programs, many clients viewed their repayment obligations as nonbinding. This was particularly the case in the more "cosmopolitan" Fada: "When they saw a white man giving out money without too much supervision, it was not difficult for some to imagine that PfP was yet another program for their welfare."[10] But a change in enforcement policy brought dramatic results. A new hardline in 1982, entailing repossession and six arrests of the most flagrant defaulters, brought the Fada delinquency rate down from 50 percent to 13 percent.

The loans ranged in value from $35 to $3,170. Slightly over half the loans were under $500. One-fifth of the loans were between $500 and $1,000 and one-seventh were in the $1,000 to $1,500 range. Average loan size was $670. If one were to attribute all the costs of this experimental program to the credit element, cost per loan would be $1,493, or 223 percent of the average loan granted.

---

[10]Cheryl A. Lassen, A Response to the DAI Evaluation of PfP/Upper Volta (Washington, D.C.: Partnership for Productivity, International, 1983).

The distribution of loans by sector is shown in Table 3. Of the total, roughly 25 percent went to new entrepreneurs or for a diversification of an established entrepreneur's activities. Well represented among the various enterprises were goat/sheep raising, rice production, rice/grain milling, weaving, tailoring, carpentry, blacksmithing, retail trade, butchery, baking, and donkey carts. From a survey of 74 clients, it was found that about half the loans were for working capital. Specifically, 48 percent of the loans to this sample group were to pay for raw materials or merchandise, 23 percent were for equipment, 16 percent were for construction and short-term labor, and 5 percent were for multiple purposes.

Table 3. Distribution of PfP/Upper Volta Loans, by Sector

Sector	As % of All Loans[a]	As % of Loan Value[a]	Average Loan Size
Agriculture/Livestock	25.0	12.1	$322
Agricultural Processing	6.5	10.6	1,083
Crafts	20.6	23.4	753
Commerce	35.6	46.0	869
Transport	12.2	7.9	431
	100	100	
Average for All Loans			$666

[a]Totals do not equal 100 because of rounding.

Of the 416 loans, the majority were to individual clients. Only 22 of the 416 loans were made to groups. Although group lending permits many small subloans to be made to more individuals and cuts average cost per loan, the weak leadership of most of the applicant groups was found to severely constrain the total number of groups assisted. In a region dominated by entrepreneurs from Nigeria, Benin, and Togo, over 90 percent of the clients serviced were members of the local tribes (predominantly Gourmantche, with the remainder Fulani and Mossi).

Almost none of the clients had access to formal credit. The ORD credit program, charging 13 to 15 percent interest, is directed toward groups that are primarily precooperative, agricultural institutions. The public National Development Bank (BND) and the private Banque Internationale des Voltas (BIV), lending at interest rates comparable to those of PfP, have eligibility

requirements of a monthly minimum salary of $100, sizable assets, and literacy. The local bank in Fada requires the client to have a minimum salary of $136 per month and full collateral. Two clients graduated to these formal credit institutions. Little use was made of the curb market.[11]

The training component of the program, once it had been drastically scaled back, appears to have been successful. During the use of the traditional approach to technical assistance, it was found that few clients learned the disciplines being taught and almost none used the techniques. The books that were kept were maintained only to please PfP, as the clients claimed they instinctively knew their business status. "This phenomenon," writes John Schiller, "combined with the fact that most of our clients were illiterate, prompted us to take a second look at the range and complexity of the enterprises we were assisting to try to discover what the owners really had to know about what they were doing in order to succeed."[12] Based on this reappraisal, PfP decided to concentrate on two areas: general business planning and working capital management. This reorientation applied primarily to Diapaga. Little effort was made in Fada to promote traditional management techniques at the project's outset or to try an alternative approach later in the project. "In Fada, credit was seen as the primary constraint, whereas in Diapaga the management of credit was perceived [to be] as important as the credit itself."[13]

Two additional means of training also were employed. First, the applicant often was requested to perform a task, such as preparing a budget. This request was seen as a training device and as a sign of entrepreneurial commitment and competence. And second, clients were used as business extension agents, as they often could anticipate problems that a new enterprise in their specialty was likely to encounter.

From the survey of 74 entrepreneurs, which was taken during the period of the revised approach, the training efforts made by the field staff differed markedly between Diapaga and Fada. About 60 percent of the clients in Diapaga received 2 visits per

---

[11]Loans from moneylenders at 60- to 180-percent interest are available. Recourse to this source of finance is very infrequent and is limited to emergency situations of a few weeks to a few months in duration.

[12]John Schiller, Rural Enterprise Development Project: Final Report (Washington, D.C.: Partnership for Productivity, 1982).

[13]Goldmark et al., Aid to Entrepreneurs.

month or 24 visits over 2 years ("visit" being loosely defined), in contrast to 32 percent in Fada. Given the universal proclivity of entrepreneurs toward finance and a disinclination to fault their own management, the helpfulness of the technical assistance as perceived by the clients was surprisingly high. Of the sample of 74 entrepreneurs, 26 percent rated the technical assistance (mainly the planning component) as aiding their operations more than the loan. A combination of loan plus technical assistance was rated as most helpful by 42 percent, with credit alone receiving top marks from 30 percent. As would be expected, technical assistance was given a higher rank in Diapaga than in Fada.

From the survey of 74 firms, it was learned that the disposable income gained by the entrepreneur and his unpaid workers from the enterprise averaged about $1,800 per year, ranging from a low of US$1,052 in the agricultural/livestock production sector to a high of $2,364 for the artisan grouping. This, however, does not reflect the full income of the client group. Roughly 55 percent derived income from other economic activities, and most received food from fields cultivated by family members.

What use did the clients make of their new income? According to the survey results, 30 percent of the clients reinvested in the assisted enterprise as the primary use of profits. Added together with the 9-percent figure for the purchasing of livestock, the 7 percent for investment in another enterprise, and the 5 percent for the construction of rental housing, the total "primary use" of profits for income-generating activities was 51 percent. Of the other uses, family food consumption and housing were the most important. And finally, the possibility of diverting the credit into alternative activities was quite substantial, because the field staff did not closely monitor the use of the loans.

The characteristics of the assisted firms and their performance over the loan period may be drawn from the survey of 74 clients. Annual sales of the assisted enterprises at the date of the survey averaged $7,400 per year, ranging from $2,655 for the agricultural/livestock production sector to $13,500 in the commercial sector. Annual sales, exclusive of the commercial sector, averaged $3,491. Average net worth was $2,500, ranging from $1,000 for the artisan grouping to $4,300 in the agriculture/livestock production sector. Each client employed an average of three full-time-equivalent workers. The location of suppliers for these firms was split roughly 60-40 between local and Ouagadougou. About 95 percent of the firms sold their goods locally.

On the whole, the loans favorably affected these enterprises. Some 57 percent of the surveyed enterprises reported

more sales, with this figure being 41 percent for the noncommercial sectors; 55 percent reported more net profits; 13 percent reported more gross profits, with the noncommercial sectors reporting a 23-percent increase; 36 percent reported more disposable income; and 60 percent reported more net worth. The average additional employment per enterprise was 0.34 person-years.

Based on information from the PfP/Upper Volta evaluation of all Phase I clients, approximately 50 percent of the clients in Fada and 40 percent of the clients in Diapaga operated enterprises at a higher level than before the granting of the loan. Roughly 12 percent of the clients had diversified into new businesses and had continued their established operations. However, about 30 percent of the clients become bankrupt or had abandoned their assisted enterprises. This failure rate approaches 44 percent for the diversified activities. The following were regarded as reasons for failure in Diapaga: natural causes outside the control of the entrepreneurs (45 percent), mismanagement (18 percent), a decision to abandon (18 percent), and inherently unprofitable ventures (7 percent), with the remainder being unclassified.

The project's greatest impact was on the consumer. Within the context of the two villages, the 416 loans totaling more than a quarter million dollars, generated much activity and a significant increase in competition. Many clients spoke of "market saturation." In Diapaga the number of market stallholders expanded by 41 percent. The 74-firm sample reported an average increase in output of 57 percent. Although most prices were rising, the profits of the assisted enterprises rose more slowly. Reflecting the downward pressure on profit margins, the share of value added in sales fell from 55 percent in late 1979 to 40 percent 2 years later. This represents a relative price reduction of 25 percent.

Overall project costs expressed in 1981 U.S. dollars are presented in Table 4. These include bad debt, AID administrative expenditures, and capital erosion resulting from inflation.

3.3 Project Benefit Estimates

We now turn to the construction of the three benefit estimates. In the minimum case, although employment per firm rose somewhat, paid employment actually fell, accounting for negative wage value added of $2,880 (offset by a positive opportunity cost--the sixth item in Table 5). Recorded interest receipts by PfP from its borrowers, albeit only two-thirds of that implied by the loan portfolio and delinquency rates, is $13,506. The profit and rent calculation is the evaluator's "disposable income" per

Table 4. PfP/Upper Volta Loan Portfolio and Lending Costs (1981 U.S. dollars)

Year	(1) Loans Paid Out	(2) U.S. Price Inflator (1981=100)	(3)[a] L.P.O. at 1981 Prices	(4)[b] Loans Out-standing
1977[c]	-	136	-	-
1978	22,917	134	30,709	15,355
1979	91,677	121	110,917	70,814
1980	91,677	107	98,084	104,501
1981[d]	68,751	100	68,751	83,418
Total	275,002		308,461	274,088

Year	(5)[e] % of All L.O.	(6) Bad Debt	(7) AID Expenditures Current Prices	(8) AID Expenditures 1981 Prices
1977[c]	-	-	32,264	43,879
1978	5.7	358	128,852	172,633
1979	25.8	1,620	128,853	155,912
1980	38.1	2,393	128,853	137,872
1981[d]	30.4	1,909	96,589	96,589
Total	100.0	6,280	515,411	606,885

Year	(9) U.V. Inflation (%)	(10)[f] Capital Erosion Index	(11)[g] Capital Erosion	(12)[h] Total Cost
1977[c]	30.0	.231	-	43,879
1978	8.2	.076	1,167	174,188
1979	15.0	.130	9,206	166,738
1980	12.3	.110	11,495	151,760
1981[d]	7.5	.070	5,839	104,377
Total			27,707	640,902

[a](3) = (1) x (2).
[b]Average maturity of 1 year based on the year midpoint applied to (3).
[c]Last quarter only.
[d]First three quarters.
[e]Calculated from (4).
[f](10) = 1 - (1/1 + inflation rate).
[g](11) = (4) x (10).
[h](12) = (6) + (8) + (11).

Sources: (1), (6), (7), Goldmark et al., Aid to Entrepreneurs, p. 1, 4, 28, and 68.
(2), (9), International Monetary Fund, International Financial Statistics.

Table 5. PfP/Upper Volta Benefit Synopsis
(1981 U.S. dollars)

Item	Minimum Case	Maximum Case	Most Likely Case
Wages	-2,880	-2,880	-2,160
Interest	13,506	21,725	17,615
Profit, Rent	101,099	156,437	117,328
Training Benefit	2,874	2,874	2,156
Distribution Weight		87,641	65,731
less			
Opportunity Cost of Labor	(-32,239)	(-29,372)	(-22,029)
External Economies			
Final Demand Linkage	-	42,138	31,604
Backward Linkage	-	89,082	66,812
Consumer Benefit		457,755	343,316
Diversion Benefit		27,500	27,500
Total Benefit	82,360	852,900	647,873

Total Project Cost	640,902
Direct Cost	(613,195)
Capital Erosion	(27,707)

firm (sales less purchased materials, wages, taxes, fuel, transportation, and loan repayment) times a standard set of coefficients that cover the number of firms, duration since receipt of the loan (1.6 years), a .5 time adjustment reflecting a gestation period before the loan produces its effects, and a failure rate correction. The sample's failure rate for abandoned or bankrupt ventures was 16.2 percent compared with 28.8 percent for the 313 clients. A training benefit is calculated at half the average wage rate per new apprentice. Finally, the opportunity cost of labor is taken as the actual cost of paid workers, the average wage rate per apprentice, and 1 1/3 the average wage per entrepreneur, for a total of $32,239.

In the maximum case, we estimate interest payments at what they should have been, given the 10-percent interest, the size of the portfolio, and the delinquency rate. To the "disposable income" gain of $475 per client we add back a conservative allowance of $260 for repayment of principal ("retained earnings") and taxes, both of which are properly part of gross profits. We assume that only the entrepreneur has an opportunity cost. Then we add in those benefits that we apply in the "maximum" and "most likely" cases: an income distribution weight of 1.5 to direct income, external economies, and a diversion benefit. Note that the gain from price reductions is equal to all other benefits combined.

Because we believe the maximum case is indeed a fair estimate of the benefits associated with the sales increase of the client firms, the major change in the most likely case is a judgment about what portion of that increase is attributable to the loan finance and technical assistance. Goldmark et al. were convinced that the completion of a major road, greatly facilitating access to surrounding villages, was a significant element in the expanded level of business activity.[14] As we noted in Section 2 in the discussion of causality, a self-financed sales expansion would most probably have entailed sizable opportunity cost. If we generously assume that half the sales increase is attributable to the new road and that without loan finance the direct and indirect output lost elsewhere would have been 50 percent of the gain, our most likely estimate would be 75 percent of the maximum case. This is the reduction factor we have applied to most of the benefit components.

The summary of our benefit-cost calculations is presented in Tables 5 and 6. The dominant benefit, one not noticed by either PfP or the evaluation team, is the price reduction enjoyed by consumers. The project is marginal, yielding an internal rate of return of 1 1/2 percent. Although benefits exceeded costs by

---

[14]Goldmark et al., Aid to Entrepreneurs.

only 1 percent the major damage was done by the year-long delay in the start-up of lending operations. In the case of Peru (Section 7), benefits exceeded costs by 3 percent, but, because lending commenced almost immediately, the internal rate of return was 136 percent.

Table 6. PfP/Upper Volta Internal Rate of Return Calculation (1981 U.S. dollars)

Year	(1)[a] Benefit	(2)[b] Costs	(3)[c] Net Benefit	(4)[d] 1-1/2% Discount Factor	(5)[e] Discounted Net Benefit
1977	-	43,879	-43,879	1.000	-43,879
1978	36,929	174,186	-137,259	.9852	-135,228
1979	167,151	166,738	413	.9709	401
1980	246,840	151,760	95,080	.9563	90,925
1981	196,953	104,377	92,616	.9422	87,261
	647,873	640,902	6,971		520

[a]Most likely benefits over project life distributed by column (5) of Table 4.
[b]Column (12) of Table 4.
[c]Column (1) - (2).
[d]$1/(1 + .015)^t$.
[e]Column (3) x (4).

A. Minimum Case

1. Wage Value Added = change in paid employment x average wage

   a. Paid employment

      New employees per enterprise = .34 person-years consisting of .23 entrepreneurs + .09 unpaid family workers + .11 salaried employees + .06 apprentices + (-.14) short-term workers [from Table VI-7, p. 95].[15]

[15]All citations of table and page numbers refer to Goldmark et al., Aid to Entrepreneurs.

Entrepreneurs, unpaid family workers, and apprentices paid out of "disposable income."

Additional remunerated employees = .11 salaried workers + (-.14) short-term workers = (-.03) person per year per firm.

(-.03) person per year x 313 client firms x .85 failure adjustment x 1.6 years average time in program x .5 time adjustment = -6.4 person-years.

b. Wage value added

-6.4 x $1.50 per day x 300 days/year = -$2,880

2. Interest (paid prior to profit)

CFAF2,931,396 + CFAF40,000 [Table IV-6 and p. 59] at an exchange rate of CFAF220 per $1 = $13,506.

3. Profit and Rent

Average profit ("disposable income") of sample firm at date of evaluation = $1,796 [p. 58]. Increase in profit since initial contact = 36% [p. 90].

Initial profit per firm = $1,796/1.36 = $1,321
Increase in profit = $1,796 - $1,321 = $475.
Average firm in program 3.2 years/2 = 1.6 years:

$475 per client year x 313 clients x .85 failure rate x .5 time adjustment x 1.6 years = $101,099.

4. Training Benefit

Change in apprentices x .5 average wage:

.06 apprentices x .5 ($1.50) average wage per day x 300 days x 313 clients x .85 failure rate x .5 time adjustment x 1.6 years = $2,874.

5. Opportunity Cost of Labor

New apprentices at $450 per year x .06 x 313 x .85 x .5 x 1.6 = $5,747.

Paid workers = -$2,880 (the reduction in wage labor permitted the workers to earn the going wage elsewhere).

Entrepreneurs at $600 per year = .23 new entrepreneurs per client x $600 x 313 x .85 x .5 x 1.6 = $29,372.

6. Total Benefits = wages + interest + profit, rent + training benefit - opportunity cost of labor:

   (-$2,880) + $13,506 + $101,099 + $2,874
   -($5,747 + $29,372 - $2,880) = $82,360.

B. Memorandum Items

1. Unrecoverable Loans

   - At end of Phase I: total value outstanding = CFAF20,934,296, or $69,781 at 1981 rates [Table IV.9, p. 63].
   - Of all loans outstanding, 9% are unrecoverable [p. 4].
   - Unrecoverable loans = .09 x $69,781 = $6,280.

2. Technical Assistance

   - Staff of 7 = 2 expatriate advisors, 5 Voltaics.
   - 90% of 313 clients received some technical assistance visits [p. 73]: .9 x 313 = 282 clients.
   - Few learned the techniques initially conveyed.
   - Almost none used the techniques initially conveyed.
   - In regard to the modified techniques, 26% of the surveyed clients rated the technical assistance as aiding their operations more than the loan.

C. Maximum Case

1. Wage Value Added

   Same as minimum case: -$2,880.

2. Interest

   Based on total loans of $275,000 at average maturity of 1 year at 10% interest and 21% delinquency rate [p. 63, loan value delinquent 6 months or more]:

   .10 x $275,000 x .79 = $21,725.

3. Profit and Rent

   Change in "disposable income" as in minimum case plus an allowance for repayment of principal and taxes (average loan size is $670):

   $475 + $250 + $10 x 313 client firms x .85 failure rate x .5 time adjustment x 1.6 years = $156,437.

4. Training Benefit

   Same as minimum case = $2,874.

5. Distribution Weight

   A 1.5 weighting (50% increment) of income received by the bottom 30% in the national income distribution applied to all direct value added:

   (-2,880) + $21,725 + $156,437 x.5 = $87,641.

6. Opportunity Cost of Labor

   New entrepreneurs only: same as minimum case = $29,372.

7. External Economies

   a. Final demand linkage = .2 x (disposable income + one-quarter of expatriate salaries and housing expenditure) = .2($156,437 + $54,255) = $42,138.

   b. Backward linkage = incremental sales less value added of all nontrading firms adjusted for a 70% opportunity cost of labor and foreign exchange:

      $1,113 - $484 x 202 firms x .70 = $89,082.

   c. Consumer benefit = change in the real price of a good, applied to the total volume of goods sold:

      $(Q_o \times \Delta P) + (\Delta Q \times 1/2\Delta P)$.

      Q_o = $4,706 initial annual sales x 313 firms x .85 failure adjustment x 1.6 years = $2,003,750 at 1981 prices.

      ΔQ = $2,683 increase in annual sales x 313 firms x .5 time adjustment x .85 failure rate x 1.6 years = $571,050.

ΔP^* = -25%

[*Calculated as follows: $\Delta P = (1-R_o) + R_n\left(\frac{1-R_o}{1-R_n}\right) - 1$,

where R_o = value added$_o$/sales$_o$ = \$2,599/\$4,706=.55
R_n = value added$_n$/sales$_n$ = \$2,937/\$7,389=.40
P = (1-.55) + .40(1-.55/1-.4) - 1 = -.25.]

$Q_o \times \Delta P$ = \$2,003,750 x .25 x .5 time adjustment x 1.6 years = \$400,750.

ΔQ x 1/2 ΔP = \$571,050 x .125 x .5 time adjustment x 1.6 years = \$57,105.

Consumer benefit = \$400,750 + \$57,105 = \$457,755.

8. Diversion Benefit

Assume that of the 30% of loan projects "failed or abandoned," funds were diverted to consumption or other uses in one-third of the cases, with benefits equal to 10% of loans made: \$275,000 x .10 = \$27,500.

9. Total Benefits = wages + interest + profit, rent + training benefits + distributional benefit + external training benefits + diversion benefit - opportunity cost of labor:

(-\$2,880) + \$21,725 + \$156,437 + \$2,874 + \$87,641 + (\$42,138 + \$89,082 + \$457,755) + \$27,500 - \$29,372 = \$852,900.

D. Most Likely Case

1. Wage Value Added

75% of maximum case = -\$2,880 x .75 = -\$2,160.

2. Interest

Splitting the difference between the \$13,506 recorded in PfP's somewhat haphazard accounts and the \$21,725 that should have been collected = \$17,615.

3. Profit, Rent

75% of maximum case = \$156,437 x .75 = \$117,328.

4. Training benefit

75% of maximum case = \$2,874 x .75 = \$2,156.

5. Distribution Weight

   75% of the maximum case = .75 x $87,641 = $65,731.

6. Opportunity Cost of Labor

   75% of the maximum case = .75 x $29,372 = $22,029.

7. External Economies

   a. Final demand linkage: 75% of the maximum case = .75 x $42,138 = $31,604.

   b. Backward linkage: 75% of the maximum case = .75 x $89,082 = $66,812.

   c. Consumer benefit = 75% of the maximum case = .75 x $457,755 = $343,316.

8. Diversion Benefit

   Same as maximum case = $27,500.

4. NORTHEAST UNION OF ASSISTANCE TO SMALL BUSINESSES (UNO) PROGRAM IN BRAZIL

The Northeast Union of Assistance to Small Businesses (UNO) was created in 1972 by the U.S. PVO ACCION/International AITEC, with the support of important members of the local business community, from which the board of directors was recruited.[16] Local private sector interest in UNO, although initially substantial, waned within a short time. Donations from this sector, equaling one-quarter of total funding during the first few years, fell to almost nothing thereafter. The evaluator suggested that the private sector saw the public support that UNO successfully obtained as permission to withdraw, and also that the private supporters were disappointed when the international funding hoped for by AITEC did not quickly materialize. It can also can also be noted that the waning of support from local banks was coincidental with the eclipse of the influence of the director of the Central Bank who was a strong UNO advocate. Ultimately, the private sector saw UNO's work as taking care of the poor, a role that was considered most appropriate for the Government.

The first step after the establishment of UNO was to obtain the participation of banks as intermediaries for the onlending of public sector credit funds. UNO, as originally conceived, was to select clients and recommend them to the banks, who would then process and disburse the loans. Because interest charges were to accrue to the banks and not to UNO (UNO received a 1-percent commission, which was insignificant in relation to operating costs), UNO was never conceived of as generating its own income, but rather as channeling funds lent or donated by the public sector and international sources. Two private banks and the state development bank of Peruambuco (BANDEPE) agreed to channel credit through UNO. Although BANDEPE was subject to credit decisions which were sometimes governed by the strength of its local political connections, this also provided influential support for UNO's cause. UNO's collaboration with the private banks worked well; however, UNO found itself forced to terminate its participation in the program when the Brazilian Government lifted ceilings on commercial bank interest rates, allowing rates to reflect the 30-percent inflation rate and to increase (by more than a third) from 25 to 35 percent. Believing that such an increase would be too hard on small businesses, UNO decided after 1977 to work only through the State bank, which had maintained a 25-percent ceiling.

---

[16]Based primarily on the evaluation report by Judith Tendler, Ventures in the Informal Sector and How they Worked Out in Brazil, AID Evaluation Special Study No. 12 (Washington, D.C.: Agency for International Development, March 1983).

In the late 1970s, UNO started to be recognized at national and international levels. Until 1979, UNO strengthened local foundations and formally separated itself from AITEC. This separation was caused by (1) UNO's dissatisfaction with the quality of technical assistance that it had to purchase from AITEC as part of its AITEC support and (2) UNO's concern that a close association with a U.S. organization like AITEC would be detrimental to the procurement of domestic funding.

From 1978 onward, primarily as a result of its discovery by the World Bank and subsequent inclusion as a "micro-firm component" in three of its development projects, UNO experienced a rapid increase in funding. World Bank funding was $400,000 in 1981. Concurrent with this increased interest from the international sphere was the increased participation and attentiveness of the national public sector. Funding from the Brazilian Government hovered around $50,000 until 1978, then jumped to above $200,000 thereafter, partly in response to the need for domestic credit commitments complementing the World Bank project, and partly out of a new interest by the Brazilian Government in the microbusiness sector.

4.1 Program Implementation

UNO is operated by a completely local and highly dedicated staff, made up of students and permanent staff. The former are work-study undergraduates who are specializing in a wide variety of fields ranging from literature and psychology to the social sciences. It is interesting to note that graduates in business administration are shunned.[17] Over the 9 years of 1973 to 1981,

---

[17]"Cheapness is not the only reason that student workers are valued for microfirm credit programs. UNO also likes to use students because of the learned bias it encounters in better trained professionals against the rustic production and management techniques of its client firms. Business administration graduates, UNO feels, are particularly 'handicapped' by their training, having only inappropriate advice or contempt for UNO's client firms; or, according to the PISCES evaluators, 'they become easily bored with the day-to-day problems of the informal sector.' (PISCES 1981, p. 171) 'The last thing we need,' UNO says, 'is a Master in Business Administration!' Students, in contrast, are felt to be still young enough to be socialized to another norm. And UNO screens its students carefully for commitment and ability to feel at ease in poor urban neighborhoods, as well as for skill and intelligence. A selected group of applicants is given 3 weeks of training and only after the first week is the final screening made. Self-selection, in UNO's eyes, also makes the student workers more suitable. University students who work are said to be some who have grown up in the neighborhoods where UNO lends, which makes them comfortable and more knowledgeable about working there." (Tendler, Ventures, p. 50.)

UNO has employed 105 full-time-equivalent students, averaging 12 per year, with the number of student-workers having risen each year. In 1980, this figure was 19.

Much of the permanent staff is composed of ex-student workers who have decided to remain with UNO. With the use of permanent staff as field workers in the interior program, the number of UNO professionals has greatly increased since 1978, totaling 48 full-time-equivalent professionals in 1980. In addition to this personnel, there are the director and the administrative support staff. Although the personnel expenditure equals roughly 85 percent of the total project costs, UNO's professional salaries are only 50 to 75 percent that of the public sector and are without its accompanying job security. Most of the permanent staff find ways of earning income from additional activities, as do many public sector professionals and university professors. The wage of student workers is 70 percent of the salary of a permanent employee (without fringe benefits), or $5 per half-day.

The use of student workers is thought to be advantageous as staff size can be tailored to match the expected demand for credit. The student workers in Recife perform the legwork of the program. Most of their time is devoted to the client selection process, with only 5 of the 38 students in 1981 involved in the loan monitoring. Until 1981, this selection process had four stages, with each requiring the collection of considerable new information. In the first stage, a census of microfirms in a particular neighborhood would be taken. This enabled UNO both to know and to be known by the microfirm sector and, thus, to reach firms with the least access to credit as well as to keep larger firms away from the program. The next stage was the selection visit to a firm to determine its eligibility and interest in the program. The third step, the diagnosis of the firm, was to detail the firm's "costs and outlays, assets and debits." The final stage, the account-building process, involved the most comprehensive drafting of the firm's records. Although this final stage was a pro forma requirement of the participating banks, its main function was to enable UNO to pare down loan size to a realistically estimated need.

In 1981, this lengthy process was finally shortened by collapsing the last three stages into one. As a result of this, loan productivity was increased and unit costs fell. Completed loan proposals per firm censused rose from 28 to 50 percent, as the shortening of the time between initial contact and loan approval caused fewer prospective clients to lose interest in the program. Productivity per full-time-equivalent worker also rose from 18 loans in 1980 to 24 loans in 1981 and is expected to rise to 40 in 1982. Costs per loan dropped from $1,160 in 1980 to $733 in 1981. Productivity was additionally boosted just prior to this period through the resolution of the processing delays

occurring with BANDEPE, which had caused clients to withdraw their applications. This change lifted the number of loans disbursed per completed application from 65 percent in 1980 to almost 100 percent in 1981.

UNO pursues a conservative lending policy specifically targeted to established microfirms. UNO sees itself as helping these firms to survive rather than to expand. The criteria are as follows: (1) the firms' owner has fewer than 5 employees (12 for manufacturing); (2) the firm owner is visably of the lower class and spends the major part of his time working in the firm, which is located in a "popular" neighborhood; (3) annual owner family income is less than $8,900; (4) annual sales are less than $45,000 ($62,000 for manufacturing); and (5) the firm is at least 3 to 6 months old and is located in a lower class neighborhood. Loan size is limited to $3,000.

UNO's nominal interest rate to borrowers is 25 percent. Other charges in the form of deduction from principal prior to disbursing to the borrower are a 3-percent commission to UNO, a 2-percent commission to the bank, a 2-percent insurance premium, and a banking tax. Loans for working capital are repayable in 12 to 15 months, with a grace period of 3 months; loans for fixed capital are repayable in up to 36 months, with a grace period of 6 months. All loans require a cosigner, a common practice in Brazil. Although UNO does not refinance delinquent loans, short-term delays are tolerated because delinquency procedures begin only after payment is 3 months overdue. The deliquency fine of 1 percent per year of loan value also is quite light.

UNO provides technical assistance to its clients through a series of courses to firm owners in a particular neighborhood. Each course lasts 2 weeks and consists of four modules: basic management, transactions with banks, basic bookkeeping, and sales promotion. These courses, which have an average attendance of 15, are not mandatory and are open to nonclients, who generally represent 5 percent of participants. The courses are conducted by the permanent staff. According to UNO, the cost of these courses and other educational activities is 30 percent of the operating budget. In addition to these courses, students often give advice during their visits in regard to management and bookkeeping, but not the production process.

4.2 Program Impact

Through 1981, 2,552 loans were disbursed to 2,016 clients. Of this, 1,680 were made in Recife, with the remainder of 872 being made through the interior program. The number of Recife

microfirms receiving UNO credit was only 4 percent of the potential client population. There have been 536 repeat loans, typically going to the most successful clients. As a proportion of loans given in any year, repeat loans have varied from a high of 39 percent in 1977 to a low of 14 percent in 1981. The value of all loans was $4,626,300. Three-quarters of the loans were for working capital; finance for fixed investment has usually been for improvement of premises. No new firms or activities were given loans.

The total costs of the program through 1981, exclusive of the banks' processing costs, were $3,187,400. The evaluator speculates that the cost to the participating banks was low, because UNO bore most of the paperwork and all of the legwork. The average loan size until 1979 was $2,000, at an administrative cost of $1,700 per loan. In 1981, during which 39 percent of all loans were granted, loan size dropped to $1,604, at a cost of $733 per loan. Over the entire period, the average loan disbursed was $1,813, at a cost of $1,249.

The repayment rate was estimated at about 90 percent. Several elements help to explain such high repayment rates. Almost all UNO's clients use the Brazilian system for consumer credit, SPC; any incident of delinquent payment reported to the SPC cuts off both bank and consumer credit. Second, there is the desire for repeat loans. And, of course, inflation greatly eases the repayment burden.

A total of 289 loans had been paid out of the guarantee fund by the end of 1980, of which 197 were not ultimately repaid by the borrower (13 percent of the total loans made up to that date). Extrapolated through 1981, the total principal not returning to the banks' credit funds would be $587,159.

The technical assistance courses and student advice have had little impact on the clients. During the 1980-1981 period, UNO reported that 38 percent of its clients attended the courses. The evaluator's data suggested a much smaller percentage. Many of the clients did not attend because they did not know of the courses. Of those attending, many stated that they did so only to show good faith during the processing of their application. Few of the participating clients found the courses of any value. The information covered was excessively general and hence had little applicability to their indiviudal concerns. Few of the clients used the suggested techniques, and often the techniques were used simply to please UNO. The student advice was formulaic and was rarely put into practice, because it was perceived as being either time consuming or inappropriate.

Of the 2,016 clients serviced by UNO, 71 percent had never had bank credit. Yet because of UNO's establishment as a credit

institution for microfirms, most of the 29 percent who had previously qualified for formal credit may have been subsequently refused by these formal institutions and sent to UNO. This form of "reverse graduation" may explain the broad discrepancies in the estimated number of clients who graduated from UNO. During the period of 1973-1979, UNO reported graduation rates of 49 and 37 percent. Yet in Tendler's sampling of clients and in her discussions with UNO, the number of clients who graduated appears to be quite small.

The average UNO client has little or no education, is male in 85 percent of the cases, and is in his forties or fifties. Most of UNO's clients had worked in medium- and small-scale modern industries prior to their current enterprises. Most left voluntarily; some, as is common in Brazil, got themselves "fired" so they could collect the accompanying severance pay, which was often used as their initial startup capital.

Roughly half of UNO firm owners earned between two and five times the minimum wage; for another third of UNO firm owners, household income was more than five times greater. When comparing UNO clients to other income earners in the Greater Recife area, the UNO clients are found to be among the top 30 percent, with over half the UNO clients in the top 16 percent. When comparing UNO firm owners to the 1981 FIDEM survey of Recife microfirms, it is found that the UNO clients are at the higher end of the local microfirm owner distribution. Over three-quarters of UNO firm owners reported that they did not have other sources of income. Whereas 14 percent of UNO clients gained additional income through property rent and 7 percent gained income through social security payments, almost all of the FIDEM owners had no outside income. Also, whereas 38 percent of UNO firm owners contributed 16 percent of their income as independent subscribers to social security and health insurance, only 3 percent of FIDEM firm owners did so. In addition, while 25 percent of the UNO-assisted firms had average sales of less than $5,400, as much as 72 percent of the FIDEM sampling had sales below this level. Finally, whereas FIDEM family-firm income averaged 2.5 times the minimum wage, 50 percent of UNO firm owners were above this level. In addition, UNO firms had a lower than normal representation of loans to female-headed firms, with such firms typically at the lower end of firm distribution.

Data on 500 UNO borrowers and would-be borrowers are shown in Table 7. The "number engaged" figure includes the entrepreneur. Retail trade is the largest activity, of which about half are retail food stores. The 24 percent of UNO loans to manufacturing includes 7 percent mixed service/manufacturing and 3 percent mixed retail/manufacturing. Approximately half of these establishments were unregistered "clandestine" firms paying no sales tax, no profit tax, and no payroll tax.

Table 7. Characteristics of 500 UNO/Brazil Firms in 1979

Sector	No. Employed per Firm	Share of UNO Loans	Other Characteristics	
Retail	2.4	42%	Average Sales	$17,224
			Ave. Loan Size	$2,000
Manufacturing	4.5	24%	One-Person Firm	41%
			Located in Home	39%
Service	3.0	34%	Unregistered	75%
			Male Head	85%

Note: The 500 firms are not a sample, but represent all firms in Recife for which UNO prepared loan proposals between April 1978 and August 1979.

From conversations with UNO clients and staff, the evaluator's impression was that the majority of UNO's client firms did not grow or increase their productivity as a result of their loans. The major loan effect (with some significant exceptions) was a decrease in costs of a roughly stationary volume of business, and hence, an increase in profits. Costs fell as the subsidized UNO loan substituted for informal credit, which is lent at rates of 200 to 400 percent. In addition, the loans enabled materials and goods to be purchased in greater bulk at lower costs. The profits, however, did not seem to be used to increase sales levels or change the production process but were used for reinvestment in working capital and for consumer expenditures that improved living standards (e.g., housing and education). The only figures that exist in the evaluator's work on firm performance concern the retail food stores. These figures suggest that although the gross profit and the imputed wage of the firm owner as percentages of sales increased from 22 to 26 percent and from 8 to 11 percent, respectively, the absolute value of sales decreased from $3,800 to $3,100 per month, as did the gross profit (from $974 to $657 per month) and the imputed wage of the firm owner (from $228 to $195 per month).

It appears, however, that these decreases in the absolute levels of value added are a recent occurrence, resulting from the sharp recession in the Brazilian economy during 1980-1981. The Coelho 1980 report on UNO, for example, found that the value added per assisted firm increased between 1977 and 1979 at 16.4

percent per year.[18] The absolute level of value added (equivalent to the evaluator's "gross profit") rose from $2,948 to $4,524 per year.[19] Nonassisted firms in the Coelho sample also experienced an increase in annual value added, as it climbed at a rate of 10.1 percent per year from $2,735 in 1977 to $3,691 in 1979.

From data collected by UNO for the period 1973-1980, 1.6 new jobs are created by each loan, typically several months after receipt of the loan. Tendler's own interviews and a study she cites (Coelho and Fuenzalida, 1980) indicate that these job increases do not persist much beyond the loan period. However, the latter study found that UNO loans appear to save jobs: over a 2 1/2-year period, 112 UNO firms suffered a net reduction in employment of 5 percent versus a reduction of 37 percent in a matched sample of 91 unassisted firms.

Finally, the evaluator found no evidence that the lower interest cost was passed along to the consumer in the form of lower prices. This is not surprising because UNO firms are an insignificant factor in the vast markets in which they are competing.

Table 8 presents data on the loan portfolio and the cost of lending. The cost of lending consists of three elements: direct UNO expenses, bad debt, and capital erosion due to inflation.

4.3 Program Benefit Estimates

Turning to the construction of the three benefit estimates (see Table 9), in the minimum case we take UNO's figure of 1.6 new jobs per loan and assume job duration of one-half year. In the maximum case we assume that the transitory jobs last for a full year, and we add in jobs saved. In both cases profits move in step with wage value added. In general, with a fairly sparse

---

[18]Lielson Coelho and Luis Fuenzalida, "An Appraisal of UNO Programs in Bahia and Recife: Preliminary Results" (Bahia, Brazil: Universidade Federal da Bahia, May 1980).

[19]These figures were reported in 1979 new cruzeiros and are adjusted to first quarter 1980 U.S. dollars to be comparable to the average sales figure of $17,227; 1979 new cruzeiros are increased by the change in the consumer price index (CPI) from the 1979 year average to first quarter 1980, then are converted to U.S. dollars with the first quarter 1980 exchange rate.

Table 8. UNO/Brazil Loan Portfolio and Lending Costs (thousands of 1981 U.S. dollars)

Year	(1) Loans Paid Out	(2)[a] Loans Out-standing	(3)[b] % of All L.O.	(4)[c] Bad Debt	(5) UNO Expenses
1973	127.5	63.8	1.2	7.0	154.6
1974	491.2	373.1	6.8	39.9	254.1
1975	546.9	786.3	14.4	84.6	246.1
1976	259.0	759.9	13.9	81.6	273.4
1977	307.8	505.9	9.3	54.6	225.5
1978	255.0	479.3	8.8	51.7	318.9
1979	331.9	218.3	4.0	23.5	434.2
1980	696.3	723.4	13.2	77.5	545.1
1981	1,610.7	1,558.1	28.5	167.4	735.5
	4,623.3	5,468.1	100.0	587.8	3,187.4

Year	(6) Inflation Rate	(7)[d] Capital Erosion Index	(8)[e] Capital Erosion	(9)[f] Direct Costs	(10)[g] Total Cost
1973	12.8	.113	7.2	161.6	168.8
1974	27.6	.216	80.6	294.0	374.6
1975	28.9	.224	176.1	330.7	506.8
1976	42.0	.296	224.9	355.0	579.9
1977	43.7	.304	153.8	280.1	433.9
1978	38.7	.279	133.7	370.6	504.3
1979	52.7	.345	75.3	457.7	533.0
1980	82.8	.453	327.7	622.6	950.3
1981	105.5	.512	797.7	902.9	1,700.6
			1,977.0	3,775.2	5,752.2

[a]Average maturity of 1.67 years applied to (1) based on the year midpoint.
[b]Calculated from (2).
[c]Distributed by (3).
[d](7) = 1 - (1/1 + inflation rate).
[e](8) = (2) x (7).
[f](9) = (4) + (5).
[g](10) = (8) + (9).

Sources: (1), (4), (5), Tendler, Ventures, pp. 74, 144.
(6), International Monetary Fund, International Financial Statistics.

Table 9. UNO/Brazil Benefit Synopsis
(1981 U.S. dollars)

Item	Minimum Case	Maximum Case	Most Likely Case
Wages	748,470	2,137,843	1,302,665
Interest	1,535,045	1,617,066	1,535,045
Profit, Rent	1,033,560	2,955,982	1,798,394
Training Benefit	38,430	109,767	66,885
Distribution Weight	-	267,230	162,832
less Opportunity Cost of Labor	(-748,470)	-	(-976,999)
External Economies			
Final Demand Linkage	-	1,018,765	620,212
Backward Linkage	-	1,830,055	811,355
Consumer Benefit	-	-	-
Diversion Benefit		2,311,650	2,311,650
Total Benefit	2,607,035	12,248,358	7,632,039
Total Project Cost	5,752,200		
Direct Cost	(3,775,200)		
Capital Erosion	(1,977,000)		

information base, all the elements of the maximum case are estimated conservatively. An exception is the diversion benefit, which is placed at 50 percent of the value of all loans issued. The magnitude of this "guesstimate" is based on two factors: (1) Tendler's comments that entrepreneurs did not seem strongly motivated to expand their designated activities, and (2) the return on risk-free, work-free savings deposits ranged from double to quadruple the 25-percent interest that UNO borrowers were paying and for many must have represented a superior alternative investment.

The most likely case is essentially the minimum case plus the jobs saved. We stick with the maximum case "guesstimate" as to the size of the diversion benefit.

The final benefit-cost measure--the internal rate of return --is calculated in Table 10. As with the other high-inflation country, Peru (see Section 7), the diversion benefit is critical in pushing total benefits beyond total cost. The high 310-percent internal rate of return occurs in large part because of the very quick startup time compared with PfP.

Table 10. UNO/Brazil Internal Rate of Return Calculation (thousands of 1981 U.S. dollars)

Year	(1)[a] Benefit	(2)[b] Costs	(3)[c] Net Benefits	(4)[d] 310% Discount Factor	(5)[e] Discount Net Benefit
1973	91.5	168.8	-77.3	-1.000	-77.2
1974	518.9	374.6	144.3	.2439	35.2
1975	1,099.9	506.8	592.2	.0594	35.2
1976	1,060.8	579.9	480.9	.0145	7.0
1977	709.8	433.9	275.9	.0035	1.0
1978	671.6	504.3	167.3	.0009	.1
1979	305.3	533.0	-227.7	.0002	-
1980	1,007.4	950.3	57.1	-	-
1981	2,167.1	1,700.6	466.5		
	7,632.0	5,752.2	1,880.1		1.3

[a]Most likely benefits over project life distributed by column (3) from Table 8.
[b]Column (10) from Table 8.
[c](3)= Column (1) - (2).
[d](4) = $1/(1 + 3.10)^t$.
[e](5) = Column (3) x (4).

A. Minimum Case

1. Wage Value Added = change in paid employment x average wage

a. Paid employment

Total jobs created 1973-1981 = 1.6 jobs per loan x 2,552 loans x average duration of 6 months = 2,042 person-years [pp. 112, 113, 144].[20]

Less 2-year reduction in net employment of 5% [p. 113; the reduction results from a 20% failure rate among firms; the survivors increased their permanent employment by .5 workers]. The average number of employees per firm, including unpaid family members, is 2.1 [p. 15]:

2,016 firms x 2.1 employees x (-.05) x 2 years x .5 time adjustment = -212 person-years.

Total employment = 2,042 - 212 = 1,830 person-years.

b. Average wage

From the 1980 UNO sample of 500 firms [p. 104] we have the following statistics:

- 22% unpaid (mostly family members)
- 48% earned less than miminum Government monthly wage of $54--say $40
- 23% received $54 per month
- 7% received $54 per month plus benefits--say $67.

Average wage

.22(0) + .48(12 x $40) + .23(12 x $54) + .07(12 x $67) = $409 per year

c. Wage value added

1,830 person-years x $409 = $748,470.

---

[20]All citations of page and table numbers refer to Tendler, Ventures.

2. Interest, Profit, Rent

   a. Interest (see Memorandum Items, Section B below)

      $1,257,647 + fees of $277,398 = $1,535,045.

   b. Profit

      A transitory increase in entrepreneurial income in the same proportion as wage value added, or equivalent of one-quarter of 1 year's earning per loan. Average entrepreneurial earnings given as $1,620 per year [p. 147]:

      2,552 loans x $1,620 x .25 = $1,033,560

3. Training Benefit

   a. No information is provided as to training or apprenticeship or the later occupation of departed workers. To avoid liability for severance pay, clandestine firms (about half) employ young unskilled workers and seldom retain them beyond a year [p. 142].

   b. For one-half of unpaid employees and those earning less than the minimum wage (i.e., 1/2 of 70%) we assume a $5 a month training benefit.

4. Opportunity Cost of Labor

   Equal to the actual wages paid = $748,470.

B. Memorandum Items

1. Interest and Fees

   a. Total value of loans issued was $4,623,300, on which the borrower paid a one-time fee of 2% bank commission, 2% commission to UNO, and a 2% insurance premium:

      $4,623,300 x .06 = $277,398.

   b. In the miminum case we assume 92% [p. 6] of the loans outstanding (see Table 8 in this report) earned 25% interest per annum:

      $5,468,031 x .92 x .25 = $1,257,647 [p. 6].

c. In the maximum case, we assume 98% [p. 6] of loans outstanding earned interest:

$5,468,031 x .98 x .25 = $1,339,668.

2. Bad Debt

a. Tendler's data are inconsistent. On page 5 it is reported that through 1981, 98 loans (3.8%) had to be repaid from the guarantee fund; on page 74 the number is given as 289, of which 197 were ultimately not recovered by the Fund through 1980. This latter figure implies a bad debt ratio of 12.7%. This does not square with the 92-98% loan repayment statistic.

b. In the miminum case we assume 12.7% of loans issued are unrecoverable (we have no information about loan size in this matter):

$4,623,300 x .127 = $587,159.

c. In the maximum case we assume 98 or 3.8% bad loans:

$4,623,300 x .038 = $175,685.

C. Maximum Case

1. Wage Value Added

a. Employment

Same as minimum case except job duration is increased from 6 months to 12 months and jobs saved are also counted. Fuenzalida and Coelho report that 112 UNO firms lost 5% of their net employment versus a 37% reduction for 91 unassisted firms over a 2-year period [p. 116].

Net transitory employment: 2,042 person-years x 2 - 212 person-years lost to 5% net reduction = 3,872 person-years.

Total person-years: 3,872 + 1,355 = 5,227.

b. Wage value added

$409 average wage (from minimum case) x 5,227 person-years = $2,137,843

2. Interest, Profit, Rent

   a. Interest

      $277,398 + $1,339,668 = $1,617,006 (from Memorandum Items, Section B above)

   b. Profit: same procedure as minimum case, in which the profit increase is proportional to the employment increase, or 2.86 times minimum case profits = $2,955,982.

3. Training Benefit

   Same procedure as minimum case, but applied to the larger employment:

   5,227 person-years x .35 x $60 = $109,767.

4. Distribution Weight

   Tendler reports that a large portion of the employees of clandestine firms (half of the total) are old, handicapped, and would not otherwise obtain employment [p. 143]. We apply the 1.5 income distribution weight to one-quarter of the wage bill:

   $2,137,843 x .25 x .5 = $267,230.

5. External Economies

   a. Final Demand Linkage = .20 x (wages + profit):

      .20 ($2,137,843 + $2,955,982) = $1,018,765.

   b. Backward linkage: purchased inputs x trading firm adjustment x adjustment for import content and opportunity cost of labor.

      From Coelho, UNO 1980, Tables 2.4 and 4.4, we estimate an annual differential sales increase of $1,834 per UNO firm relative to the unassisted firms. Sales - value added = purchased inputs:

      $1,834 x 2,016 firms x 2 years + (222 firms saved x $17,224) - ($2,137,843 + 2,955,982 + $1,617,066) = $11,218,416 - $6,710, 891 = $4,507,525.

      42% of loans went to trading firms whose trade goods are excluded. It is assumed that 30% of net

purchased inputs represents import content and the opportunity costs of labor: $4,507,525 x .58 x .7 = $1,830,055.

c. Consumer benefits: no reported price reductions = 0.

6. Diversion Benefit

Three factors: (1) a low value added response per loan dollar, (2) alternative returns to placing the loan proceeds in a savings bank ranged from 58% to 109% free of all risk or work, (3) limited enthusiasm to expand designated activities--suggest diversion was probably very high. We put our guess at 50% of the value of loans issued: $4,623,300 x .5 = $2,311,650.

D. Most Likely Case

1. Wage Value Added

a Employment: same as minimum plus jobs saved:

1,830 + 1,355 = 3,185 person-years.

b. Wage value added

3,185 x $409 = $1,302,665.

2. Interest, Profit, Rent

a. Interest: minimum case = $1,535,045.

b. Profit: employment-based estimate as in the minimum case:

2,552 x $1,620 x .435 = $1,798,394.

3. Training Benefit

Same procedure as minimum case:

3,185 person-years x .35 x $60 = $66,885.

4. Distribution Weight

Same procedure as maximum case:

$1,302,655 x .25 x .5 = $162,832.

5. Opportunity Cost of Labor:

   The other side of the coin of the distributional procedure; that is, we assume that three-quarters of the wage bill represented the opportunity earnings of those who received it:

   $1,302,665 x .75 = $976,999.

6. External Economies

   a. Final demand linkage: profits and wages x .2:

      (1,798,394 + 1,302,665) x .2 = $620,212.

   b. Backward linkage: same procedure as maximum case, but we assume the opportunity cost of labor and foreign exchange constitute 40% of purchased inputs; we use a trading firm adjustment of .5 rather than .58 to correct for the latter's higher purchased inputs-value added ratio; and, in keeping with our direct value added calculations, we are assuming a sales increase equal to 60% of the maximum case:

      $4,507,525 x .6 x .5 x .6 = $811,355.

7. Diversion Benefit

   Same as maximum case.

5. THE INSTITUTE FOR HONDURAN DEVELOPMENT (IDH) PROGRAM

In 1977, the Institute for International Development, Inc. (IIDI) began credit operations in Honduras.[21] Initially operating on the basis of donations from Christian businessmen and the volunteer service of an American missionary, IIDI received an AID matching grant on March 6, 1979 and subsequently established the Instituto para el Desarrollo Hondureno (IDH) as a nonprofit Honduran organization. This institutional adjustment reflected the revised policies of IIDI, wherein locally based and self-sufficient programs were to be created to allow IIDI resources to move elsewhere. IDH received financial and staff support from IIDI until their formal separation in December 1981. Since this date, IDH has continued operations with funding from AID and the Inter-American Development Bank (IADB).

The objectives and methods of IDH were formed during its association with IIDI. These objectives are threefold: (1) to reduce unemployment through the development of small enterprises, (2) to provide an alternative credit source to those businesses unable to obtain it through existing formal lines, and (3) to provide its clients with technical and managerial assistance. Both IIDI and IDH utilize social networks to achieve these aims. Notwithstanding the broad Protestant affiliation which both organizations enjoy, neither limits its work to a specific creed.

5.1 Program Implementation

IDH has two operational components, a $250,000 loan fund and a technical assistance program. After making initial contact with the program, applicants are given forms containing questions on social and occupational background and purpose of the loan. The applicant is asked to complete three displays (a break-even chart, an income statement involving depreciation, and a cash-flow diagram including loan repayment) which refer to the loan

---

[21] A report by Peter H. Frazer and Bruce A. Tippett, Impact Evaluation: IIDI/IDH Honduras (Washington, D.C.: Agency for International Development, May 1982) provides the institutional and historical background to the IDH project. The information on IDH operational procedures was obtained through interviews from David Befus and Peter Fraser; quantitative data were developed from the original Fraser-Tippet questionnaires of 69 clients, as well as from IDH records. We are much indebted to Peter Fraser, David Befus, and Oscar Chicas for their help.

project or established business. IDH uses this exercise as a test of business knowledge and commitment to the program. The loan officer then analyzes the application for its feasibility and, should the project seem viable, visits the firm and constructs a separate report.

At this point, the applicant's file is reviewed by the Board of Directors. Approved loans are then processed and disbursed. Roughly 1 month elapses between the initial application and the disbursement of the loan. Until 1981, the disbursal of the loan was a very simple procedure, requiring a witness but not a lawyer. A private document (documento privado) describing IDH and the loan purpose and a promissory note returnable to the client upon repayment of the loan were signed by both parties. Legally binding collateral documents were introduced in the later part of 1981. This change in policy reflected both the insistence on the part of AID that the loan programs that it assists formally collateralize their loans, and the termination of outside financing which left IDH dependent on its interest earnings as its sole source of income.

Every 30 to 45 days thereafter, the enterprise is visited for the purposes of loan collection and general monitoring of the business' progress. These visits originally entailed some technical assistance; however, as the program grew and the field staff's collection duties increased, the teaching element was reduced in scope. Delinquencies were met with threats from IDH, but without legal authority to seize property prior to 1981, IDH could only back down or attempt to reschedule these loans.

The technical assistance consists of four 3-day seminars per year, held as retreats in various parts of the country. Those attending gather to discuss business experiences, to learn general management practices and bookkeeping, to gain a sense of professionalism within a circle of associates, and to foster a spirit of motivation within the IDH family. Participating clients often bring along outsiders who, in their opinion, meet program qualifications. It is at these seminars that potential clients learn of IDH and are introduced to program members.

Promotion of the program is kept low-key. The use of word-of-mouth contact keep the population of applicants--and hence processing costs--at manageable levels. The pool is further limited by accepting only applications from certain geographical zones along specific monitoring routes.[22] The church network also facilitates the search for reputable borrowers by providing

---

[22]It should be added that as a result of its recent $400,000 grant from the Inter-American Development Bank, IDH is moving into additional client zones.

a system of referrals. This saves time in the gathering of information on background and integrity. The direct costs associated with informing potential clients of the program's work and regulations are also reduced by using existing clients as program spokespeople.

5.2 Program Impact

From the beginning of its operations in 1977 to December 1982, IIDI/IDH disbursed a total of 161 loans equaling $515,768. Average loan size was $3,203. Loans ranged in value from $250 to $50,000. The average maturity of the loan was 2 years, with the average client being in the program for 1.5 years. The annual interest rate was 10 to 16 percent. During this period formal institutions were charging 27 percent (19 percent interest plus fees of 5 to 8 percent). The average monthly loan payment of principal and interest was about $150. The number of loans made per year, their value, and a calculation of the size of the average loan are shown in Table 11. Of note in this table is the striking reduction in average loan size after 1979. This decrease stems, in part, from the small experimental loans given to poor farmers in Zopilotepe during 1981 and 1982.

Table 11. IDH/Honduras Loans, 1977-1982
(current dollars)

Year	No. of Loans Made	Value of Loans	Average Loan Size
1977	2	6,500	3,250
1978	10	80,325	8,033
1979	17	159,500	9,382
1980	17	59,500	3,500
1981	20	46,168	2,408
1982	95	163,775	1,724
Total	161	515,768	
Average of All Loans			3,203

The cost of the program exclusive of the loan fund during this period is estimated at $152,444 and is broken down by year and type of cost in Table 12.[23] The average loan cost $947 or 29 percent of its value. Costs rose over the period, with salaries and benefits showing a dramatic increase. Until mid-1979, because the manager was a missionary volunteer, the only salary was that of a secretary. Thereafter, personnel costs ballooned: an assistant manager was hired in 1979 ($600/month); in 1980 an accountant ($400/month) and a supervisor ($300/month) were employed; in 1981 a second supervisor ($300/month) and bookkeeper ($400/month) were hired; and in 1982 two additional supervisors (each at ($300/month) were added to the payroll. The increase in staff has been paralleled by an increase in loans processed: in 1982 there was a fivefold increase.

Table 12. IDH/Honduras Operational Costs (current dollars)

Item	1977	1978	1979	1980	1981	1982
Salaries and Benefits	3,077	3,077	3,077	15,129	25,397	39,175
Supervision and Travel per Diem	483	483	483	4,416	4,623	7,097
Office Rent and Expenses	2,061	2,061	2,061	4,543	6,059	6,430
Other Expenses	2,722	2,722	2,722	5,523	3,381	5,643
Total	8,343	8,343	8,343	29,611	39,460	58,345

By the end of 1982, 137 loans valued at $333,543 were outstanding. Fifty-eight of these loans (42 percent) were overdue. Roughly $35,000 of the amount outstanding was considered unrecoverable, but had not yet been written off. Three factors account for the high delinquency rate. First, the repayment

[23]Costs for 1977 and 1978 were not available and were assumed equal to 1979 costs, because in all 3 years the staff remained constant. Costs are in current dollars.

terms were not appropriately structured. Because of its 3-year contract with AID, IIDI instituted a payback policy limiting terms to 3 years and encouraging terms of 2 years or less, with grace periods of 3 to 6 months. As a comparison with the Rural Development Fund (FDR) project in Peru makes clear, these are very short maturities for fixed asset loans. Because many of the clients that IDH assisted did not generate cash flow until well after the initial payments were due (i.e., farmers who had bought land and seed with the loan and intended to pay it off with the harvest, or new factories that required a startup period greater than the loan's grace period), many loans fell immediately into delinquency. IDH, on the other hand, did not fear these imminent delinquencies, but preferred to accept them as casualties of a political decision beyond its influence and to reschedule when the time came.

A second factor was the high-risk profile that, for a variety of factors, IDH adopted for its loan portfolio. Because one of IDH's donors, the U.S. Overseas Private Investment Corporation (OPIC), provided half of its funds in the form of a grant, the loan fund was extremely solvent. This security allowed IDH to respond positively to the 1979 Carter Administration mandate to reach "the poorest of the poor" as well as to fulfill the IIDI requirement that each client be ineligible for commercial loans. Additionally, because of the OPIC cushion, IDH was able to give client survival a higher priority than repayment performance. Should a firm fall into difficulties, as was the case for many new firms and agricultural/livestock enterprises, IDH would assess the cause of delinquency. If the business was thought to be uneconomical only in the short term and if the client's commitment remained high, IDH would reschedule the loan. This allowed many firms to remain solvent. An interesting aspect of the delinquencies was their breakdown by gender of the borrower. Of the 20 delinquencies in the Fraser/Tippett April 1982 survey of 69 clients, 19 were men. Only 1 of 13 women in this sample, or 8 percent, was late in payment, compared with 19 of 56 men, or 34 percent. Ceteris paribus, it appears that men are roughly 4.5 times as likely as women to be delinquent in the IDH program.[24]

The third factor relates to the use of the documento privado. Because none of the guarantees was legally enforceable, IDH was unable to foreclose on unjustifiable delinquencies.

---

[24]In regard to our sample, the loans to women were smaller and had a larger working capital share than those going to men. The women's businesses were less often startups and were primarily baking, seamstress, and retail activities.

Of 69 enterprises surveyed, two-thirds were in the agricultural/livestock or manufacturing sectors. Their combined share of the total loan value was 79 percent. The remaining 21 percent was divided among the service/transportation, commercial, and construction sectors (see Table 13). The average loan of the enterprises surveyed was for $6,241.

Table 13. Characteristics of 69 IHD/Honduras Enterprises

Sector	As % of All Loans	As % of Loan Value	Average Loan Size	Ave. No. Employed (includes owners)
Agricultural/ Livestock	36.2	37.5	$6,450	6.1
Service/ Transportation	14.5	13.4	5,910	5.3
Commercial	13.0	2.7	1,334	1.6
Construction	5.8	3.6	4,000	5.0
Manufacturing	30.4	41.3	8,698	6.4

Located in Home	51%	Products Sold Locally	93%
Registered	60%	Supplies Procured Locally	70%
Use of Bookkeeping (at initial contact)	4%	Urban Location	50%

Source: Fraser and Tippett.

The average firm employed 5.5 people, inclusive of the owners. The ratio of family to nonfamily workers was 1 to 3. Only 9, or 13 percent, of the 69 firms were solely owner operated, and 6 firms, or 8.7 percent, had 10 or more nonfamily workers. The average client was 39 years old. Of the 69 clients, 13, or 19 percent, were women. According to Annex 1 of the Fraser/Tippett evaluation, over half of the 28 clients on whom information was available were not members of the lowest social or economic strata. Roughly one-third of this sample of

28 were judged bankable, with the agricultural sector clients reaching 85 percent. There were 5.9 members in the average client family. The amount of education varied greatly; however, the majority of clients had limited schooling. Among a Catholic majority population, most clients were Protestant, with the Evangelical denomination being the predominant sect.

In comparison with the 1979 Stallman and Pease MSU survey of 3,703 Honduran rural industries,[25] it was found that the IDH client firms are at the top end of the distribution. From this large survey, employment per enterprise (inclusive of owners) averaged 2.2 persons with 94 percent of the firms having fewer than 5 workers and 59 percent being operated solely by the owner. Family members accounted for 68 percent of the labor force. The total assets of the firm averaged $1,093. Firm owners were women in 61 percent of the surveyed cases.

Tables 14 and 15 report additional information for two subsamples from the 69-firm Fraser/Tippett survey. From Table 14 we can see that female-headed firms are a smaller proportion among these larger enterprises serviced by IDH, namely 8 percent versus 61 percent. Note the high proportion of fixed investment and new activities that the loans financed. Increases in income associated with the receipt of loans is shown in Table 15.[26] Between the time of the initial contact with the program and April 1982, the average monthly personal income increased from $346 to $387. This $41 average increase represented 12 percent of their initial earnings. Of the 20 clients with detailed income information, 12 increased their income over the period, 4 remained unchanged, 2 showed a loss, and 2 more had ceased operations. Dividing these 20 clients into the groups of loans to established firms (6) and to business startups (14) yielded noteworthy findings. Both in absolute terms and as a percentage of income at the date of initial contact, the startup group outperformed the established clients ($57 vs. $6, or 25% vs. 1% income improvements). Breaking down the startup group between those entrepreneurs who had background in the field of the new venture (7) and those who did not (7), the former grouping was found to have the highest income growth (63%) whereas the income of the latter, which included both of the production closedowns in the sampling, actually declined (-20%).

---

[25]Judith I. Stallman and James W. Pease, Rural Industrialization Policy and Programmes in Honduras: A Preliminary Assessment, (Geneva, Switzerland: International Labour Office, 1980).

[26]All income and asset figures in 1982 prices.

Table 14. Characteristics of 24 IDH/Honduras Clients and Businesses

Clients		Businesses	
Women	8%	Agricultural/Livestock	21%
With Other Activities	46%	Service/Transportation	17%
Previous Formal Loans	26%	Commercial	4%
Average Loan Size	$8,629	Construction	8%
Fixed Investment Per Loan	70%	Manufacturing	50%
		Average No. Employees per Firm	4.7
		Business Startup/ Diversification	71%

Source: Fraser and Tippett.

Table 15. IDH/Honduras Monthly Client Income

Category	All Firms	Established Firms	Start-ups (overall)	Start-ups (with background)	Start-ups (w/out background)
Initial Contact	$346	$592	$232	$250	$215
April 1982	387	598	298	407	172
Absolute Change	41	6	57	157	(-43)
% Change	12	1	25	63	(-20)
No. of Clients Whose Incomes					
Increased	12	3	9	6	3
Unchanged	4	3	1	1	0
Decreased	2	0	2	0	2
Not Producing	2	0	2	0	2
Total	20	6	14	7	7

From detailed information on the assets of 8 clients, all were found to have substantially increased their personal business holdings. Assets grew by 1.5 to 10 times their initial levels, with the average growth from $4,150 to $12,400, or 199 percent (or holdings worth $2.02 were created for each fixed investment loan dollar). Detailed information on business sales and profits was sparse; however, sales were roughly 6.5 times greater than the clients' April 1982 disposable incomes, and profits were about double this latter amount, indicating that approximately $387 was returned monthly to each business. Assuming that the gross profits of new firms rose from zero to twice disposable income, that loan payment was $150, and that the profits of established enterprises also increased by two times the disposable income increment, monthly profits increased by an average of $660. Similarly, new firms increased their sales from zero to 6.5 times disposable income, and established firms by 6.5 times their group's incremental disposable income, giving an average increase of $1,797.

Approximately 2.7 jobs were created per assisted enterprise. Of the 56 new jobs in 22 enterprises, 14 were for apprentices and trainees, and 14 were taken by family members. The average monthly salary paid to each of the 46 employees was $81. When comparing the jobs generated from the 10 loans larger than $5,000 with the number generated by the 12 smaller loans, it was found that 3.4 and 2.2 new jobs were created, respectively. However, on a loan-dollar-per-job basis, one position was generated from every $4,680 of the larger loans, compared with one for every $1,269 for the smaller loans.

On the basis of the above figures, an average client firm's monthly cash flow in April 1982 is provided in Table 16. The $387 disposable income was doubled to $774 and then increased by

Table 16. IDH-Member Firm Monthly Cash Flow, April 1982

Item	Amount
Sales	$2,516
Raw Materials	1,227
Salaries	365
Gross Profit	924
Loan Repayment	(150)
Retained	(387)
Disposable Income	(387)

$150 for loan repayment to yield gross profits of $924. A sales figure of $2,516 was arrived at by multiplying disposable income by 6.5. Subtracting gross profits and $365 for salaries (4.5 nonowners at $81 each) from sales left a remainder of $1,227 for raw materials, rental, and extraneous business outlays.

IDH provided its clients with technical and managerial assistance primarily through seminars. Roughly two-thirds of the clients attended one or more of the seminars. In the opinion of the clients, the seminars were an excellent source of motivation and support. Many commented that by being in a group of small business people for the first time, their feelings of isolation were eased as they finally had the opportunity to discuss business concerns among associates. Aspects of the seminar that also were mentioned as useful were the discussions of legal matters, business management and control (including accounting practices), and employee relations. The percentage of clients who had a bookkeeping system (albeit often not up to date) was found to have risen sharply from the overall initial contact level of 4 percent to an astonishing 87 percent for the 24 clients interviewed in April 1982. The technological advice given by IDH to its agricultural/livestock clients was uniformly perceived by these clients as being inappropriate or of poor quality. The clients unanimously voiced the opinion that the credit component was the most important form of assistance given by the program.

Overall project costs expressed in 1982 U.S. dollars are presented in Table 17. These costs comprise three elements: direct IDH expenditures, bad debt, and capital erosion resulting from inflation.

5.3 Program Benefit Estimates

We now turn to the estimation of benefits. We began by adjusting the sample's findings downward to reflect the size of the average firm in the program. The yardsticks used were the distinction between employment generated by "large" loans versus "small" loans and the ratio of 2.7:1 between the size of the average sample loan and that of the overall program average. Paid employment was thus calculated on the basis of 2.5 new jobs per firm and a standard set of coefficients, yielding an estimated $278,752 in wage value added. The sample's figure for monthly profit increase was also discounted and yielded $336,490 in profit and rent. The training benefit was calculated at half the unskilled wage rate and equaled $17,422. The opportunity cost of labor was taken as the cost of paid workers (1.5 times the average wage) and apprentices, as well as the previous income

Table 17. IDH/Honduras Loan Portfolio and Lending Costs (thousands of 1982 U.S. dollars)

Year	(1) Loans Paid Out	(2)[a] Loans Out-standing	(3)[b] % of All L.O.	(4)[c] Bad Debt	(5) IDH Expenses
1977	10.9	5.4	0.6	0.2	14.0
1978	126.9	73.7	8.0	2.8	13.1
1979	223.3	228.7	24.7	8.6	11.7
1980	72.0	277.7	30.0	10.5	35.9
1981	53.0	179.7	19.4	6.8	43.4
1982	163.8	159.8	17.3	6.1	58.3
Total	649.8	924.9	100.0	35.0	176.4

Year	(6)[d] Inflation Rate (%)	(7)[e] Capital Erosion Index	(8)[f] Capital Erosion	(9)[g] Direct Costs	(10)[h] Total Cost
1977	8.4	.077	0.4	14.2	14.6
1978	6.2	.058	4.3	15.9	20.2
1979	12.5	.111	25.4	20.3	45.7
1980	15.6	.135	37.5	46.4	83.9
1981	10.2	.093	16.7	50.2	66.9
1982	9.6	.088	14.1	64.4	78.5
Total			98.3	211.4	309.8

[a]Average maturity of 2 years applied to (1) based on the year midpoint.
[b]Calculated from (2).
[c]Distributed by (3).
[d]IMF. International Financial Statistics.
[e](7) = 1 - (1/1 + inflation rate)
[f](8) = (2) x (7)
[g](9) = (4) + (5)
[h](10) = (8) + (9)

Source: (6), International Monetary Fund, International Financial Statistics.

levels of all new entrepreneurs. Given the high combined opportunity cost of labor (-$511,883), total benefits in the minimum case totaled only $120,781.

In the maximum case, wage value added and training benefits remained as in the minimum estimates, while the profit calculation differed only insofar as the higher profit increase per firm was used. An income distribution weight of 1.5 was applied to one-third of the wage bill. Although only new entrepreneurs were assumed to have had opportunity costs, this negative item remained quite sizable. After estimating the external economies, we calculated a diversion benefit in the belief that part of the high delinquency was attributable to expenditure of loan proceeds on nondesignated items. Total benefits in the maximum case totaled $759,959.

The most likely case followed the maximum estimate with the exception of the opportunity cost of labor and the average time in the program. Because 71 percent of IDH's clients were new entrepreneurs, and new enterprises were assumed to require a half-year startup period, this figure was adjusted downward to 1.1 years and affected calculations down the line. Benefits in the most likely case totaled $385,766.

Our benefit-cost estimates are summarized in Tables 18 and 19. Of note is the strong neutralizing effect that the opportunity cost of labor of new entrepreneurs has on the profit generated by all firms assisted in the program. A downward emphasis notwithstanding, the program shows a rate of return of 172 percent. This success is in large measure the result of the speed with which the program came on-line; although total benefits exceeded total costs by only 25 percent, the net benefit stream turned positive in the program's second year.

Table 18. IDH/Honduras Benefit Synopsis
(1982 U.S. dollars)

Item	Minimum Case	Maximum Case	Most Likely Case
Wages	278,752	278,752	180,792
Profit, Rent	336,490	412,965	267,775
Training Benefit	17,422	17,422	11,297
Distribution weight	-	46,459	30,132
less			
Opportunity Cost of labor	(-511,883)	(-338,163)	(-344,512)
External Economies			
Final Demand Linkage	-	138,343	89,713
Backward Linkage	-	152,404	98,792
Consumer Benefit	-	-	-
Diversion Benefit	-	51,777	51,777
Total Benefit	120,781	759,959	385,766

Total Project Cost	309,700
Direct Cost	(211,400)
Capital Erosion	(98,300)

Table 19. IDH/Honduras Internal Rate of Return Calculation (1982 U.S. dollars)

Year	(1)[a] Benefit	(2)[b] Costs	(3)[c] Net Benefits	(4)[d] 172% Discount Factor	(5)[e] Discount Net Benefit
1977	2,315	14,600	-12,285	1.000	-12,285
1978	30,861	20,200	10,661	.3676	3,919
1979	95,284	45,700	49,584	.1352	6,704
1980	115,730	83,900	31,830	.0497	1,582
1981	74,839	66,900	7,939	.0183	145
1982	66,738	78,500	-11,762	.0067	-79
	385,766	309,800	75,967		-14

[a]Most likely benefits over project life distributed by column (3) from Table 17.
[b]Column (10) from Table 17.
[c](3) = Column (1) - (2).
[d](4) = $1/(1 + 1.72)^t$.
[e](5) = Column (3) x (4).

A. Minimum Case

1. Wage Value Added = change in paid employment x average wage

   a. Paid employment

      "Large" loans created 3.4 jobs per loan and "small" loans 2.2 jobs per loan; "small" loans are 77% of all loans [from sample of 24 firms].

      Average employment per firm = (2.2 jobs x .77 "small" firms) + (3.4 jobs x .23 "large" firms) = 2.5 jobs per firm:

      2.5 jobs x 161 client firms x .95 failure adjustment x 1.5 years average time in program x .5 time adjustment = 287 person-years.

b. Wage value added

287 person-years x $81/month average wage x 12 months/year = $278,752.

2. Profit, Rent

Monthly profit increase of $660. Sample figure adjustment for overall program: average loan 2.7 times smaller than sample; profit increase reduced by 2.7 times [from sample of 24 firms]:

$660 monthly profit increase/2.7 x 161 client firms x .95 failure adjustment x .5 time adjustment x 1.5 years x 12 months/year = $336,490.

3. Training Benefit = change in apprentices x .5 average apprentice wage.

From sample of 24 firms, 14 of 56 new jobs for apprentices and trainees; apprentice wage estimates at one-half of $81 average monthly wage = $40.5:

14/56 apprentices x 2.5 jobs per client firm x 161 client firms x .5 ($40.5/month) .95 failure adjustment x .5 time adjustment x 1.5 years x 12 months/year = 17,422

4. Opportunity Cost of Labor

New apprentices at $40.5 per month = 14/56 x 2.5 x 161 x $40.5 x .95 x .5 x 1.5 x 12 = $34,844.

Opportunity cost of paid employment = 1/2 of wage bill = .5 x $278,752 = $139,376.

Entrepreneurs at $346/month = .71 new entrepreneurs x 161 x $346 x .95 x .5 x 1.5 x 12 = $338,163.

5. Total Benefits = wages + profit + training benefit - opportunity cost of labor:

$278,752 + $336,490 + $17,422 - ($34,344 + $139,376 + $338,163) = $120,781.

B. Memorandum Items

1. Bad Loans

About $35,000 of loans considered uncollectable.

2. Technical Assistance:

   - 1982 staff of one expatriate consultant, one local manager, one local accountant, one local bookkeeper, four local supervisors.

   - Two-thirds of the clients attended the seminars: .67 x 69 clients = 46 clients.

   - Seminars were "excellent" source of motivation and support; "strong" on legal matters, business management and control, and employee relations; "poor" in technological advice.

   - Clients with bookkeeping systems increased during program from 4% overall to 87%.

C. Maximum Case

1. Wage Value Added

   Same as minimum case: $278,752.

2. Profit, Rent

   Monthly profit increase of $660 as in minimum case plus monthly loan repayments of $150 = $810/month adjusted downward by 2.7:

   $810/2.7 x 161 client firms x .95 failure adjustment x .5 time adjustment x 1.5 years x 12 months/year = $412,965.

3. Training Benefit

   Same as minimum case = $17,422

4. Distribution Weight

   A 1.5 weighting of income received by the bottom 30% in the national income distribution applied to one-third of the wage bill:

   ($278,752)/3 x .5 = $46,459.

5. Opportunity Cost of Labor

   New entrepreneurs only: as in the minimum = $338,163.

6. External Economies

   a. Final demand linkage = .2 x (wages + profit):

      .2 ($278,752 + $412,965) = $138,343

   b. Backward linkage = incremental sales less value added of all nontrading firms adjusted for a 70% opportunity cost of labor and foreign exchange.

      Average monthly sales increase of $1,797, adjusted downward by 2.7, minus wages and profit [from sample of 24 firms].

      Sales increase = $1,797/2.7 x 161 firms x .95 failure adjustment x .5 time adjustment x 1.5 years x 12 months = $916,170.

      ($916,170 - ($278,752 + $412,965)) x .70 import adjustment x .97 nontrading firm adjustment = $152,404.

   c. Consumer benefit

      Real prices did not drop: consumer benefit = 0.

7. Diversion Benefit

   Assume that of the 10% of loans which failed and one-half of the 42% of loans overdue, funds were diverted to consumption or other uses in one-third of the cases, which comes to 10% of loans made:

   $517,768 x .10 = $51,777

8. Total Benefits = wages + profit + training benefits + distributional benefit + external economies benefits + diversion benefit - opportunity cost of labor:

   $278,752 + $412,965 + $17,422 + $46,459 + $138,343 + $152,404 + $51,777 = $338,163 - $759,959.

D. Most Likely Case

1. Wages

   a. Paid employment

      Assume new enterprises (71% of firms) take 1/2 year to start up; average time in program = (1.5 years x .29) + (1.0 year x .71) = 1.1 years.

Given that many delinquencies were result of short-term operating difficulties, failure adjustment = 1 - 1/2(10% failure rate) - 1/3 (42% delinquency rate - 10% failure rate) = .84.

2.5 jobs x 161 firms x .84 failure adjustment x 1.1 years x .5 time adjustments = 186 person-years.

b. Wage value added

186 person-years x $81/month x 12 months/year = $180,792.

2. Profit, Rent

$810/month/2.7 x 161 firms x .84 failure adjustment x .5 time adjustment x 1.1 years x 12 month/year = $267,775.

3. Training Benefit

14/56 apprentices x 2.5 jobs per firm x 161 firms x .5 ($40.5/month) x .84 failure adjustment x .5 time adjustment x 1.1 years x 12 months/year = $11,297.

4. Distribution Weight

1.5 weighting on one-third of wage bill:

($180,792)/3 x .5 = $30,132.

5. Opportunity Cost of Labor

New apprentices, same as minimum case = $34,844.

Paid employment = 1/2 of wage bill = .5 x $180,792 = $90,396.

New entrepreneurs = $346/month x .71 new entrepreneurs x 161 firms x .84 failure adjustment x .5 time adjustment x 1.1 years x 12 months/year = $219,272.

Total opportunity cost of labor = $34,844 + $90,396 + $219,272 = $344,512.

6. External Economies

a. Final demand linkage: .2 x (wages + profit) = .2($180,792 + $267,775) = $89,713.

b. Backward linkage:

Sales increase = $1,797/2.7 x 161 x .84 x .5 x 1.1 x 12 = $594,064.

Direct value added (from 1 + 2 above) = $180,792 + $267,775 = $448,567.

Backward linkage = ($594,067 - $448,567) x .70 import adjustment x .97 nontrading firm adjustment = $98,792.

c. Consumer Benefit

Real prices did not drop: consumer benefit = 0.

7. Diversion Benefit

Same as in maximum case = $51,777

8. Total Benefits

1 + 2 + 3 + 4 - 5 + 6 + 7 = $385,766

6. THE DOMINICAN DEVELOPMENT FOUNDATION (DDF) PROJECTS IN THE DOMINICAN REPUBLIC[27]

Founded in 1965, the Dominican Development Foundation (DDF), a private voluntary organization, works extensively in the rural communities of the Dominican Republic. In 1980, DDF became interested in an urban microenterprise program and subsequently launched PRODEME in May 1981 with AID funding. PRODEME consists of two subprojects: the solidarity group component and the microenterprise component. Lending operations for both subprojects began in July 1981 and additional funding has come from the Inter-American Foundation, Appropriate Technology International, and Dominican sources.

PRODEME is part of the PISCES (Program for Investment in Small Capital Enterprise Sector) Project Phase II, whose focus is an in-depth evaluation of the demonstration projects developed by PISCES in conjunction with local institutions. These projects are funded in part by regional AID Missions, with ACCION International/AITEC acting as the prime contractor and supplying an adviser on project design, implementation, and training.

6.1 Microenterprise Component

The microenterprise component of PRODEME is targeted to small artisan manufacturers with two to three employees and was adapted from previous ACCION programs in Brazil (UNO), Colombia, and Mexico. The objectives of this component are the generation of new income and employment and the participation of large numbers of businesses in the program at low cost. Because it is generally assumed that retail and wholesale trading firms have little potential for creating new jobs, only small manufacturing and service firms are eligible for assistance. Potential clients in the microenterprise component learn of the program either through word of mouth from project participants or through newspaper announcements. All loans are fully collateralized in the form of property, household appliances, or cosigners.

The processing of a loan involves much time and effort on the part of the DDF staff. Preparation of the initial application takes an average of four visits. Should questions arise on

---

[27]Based primarily on the evaluation report by Jeffrey Ashe, Assisting the Survival Economy: The Microenterprise and Solidarity Group Projects of the Dominican Development Foundation (Cambridge, Massachusetts: ACCION International/AITEC, 1982).

the application during its review by the DDF analyst, further visits are undertaken to resolve the matter. In addition, a simple bookkeeping system is initiated and the owner is advised on management practices. Because the maintenance of these records is required throughout the program, the DDF coordinator returns to the firm to ensure compliance.

After loan approval, the staff coordinator visits the firm on a weekly basis, to provide technical assistance in bookkeeping, marketing, and personnel management, as well as to monitor the progress of the loan itself, which is generally disbursed 30 to 60 days after approval. An offering of formal courses complements the technical assistance provided. In theory, the collateral is to be foreclosed when the coordinator is unable to collect overdue payments. In only one case, however, have personal assets actually been seized.

The PRODEME microenterprise component differs from its predecessor, UNO/Recife, in three ways. First, AITEC excludes trading firms from eligibility in DDF. Second, DDF disburses credit directly from its own fund, thereby retaining the interest earned on the loans. And third, DDF provides increased technical assistance to both its clients and the microfirm community.

From July 1981 to December 1982, 101 loans totaling $163,266 were disbursed to 101 microfirms through the microenterprise component. Three hundred firms received some technical assistance in the form of a loan, of several visits from coordinators, or of attendance in the courses. Costs up to December 1982, inclusive of those for administration and technical assistance, were $69,534, or 44 percent of total loan value. The projected total costs of an average 14-month loan of $1,564 is $917, or 59 percent of its value. An interest rate of 12 percent was charged, bringing in $188 per loan and implying a subsidy of $729 per loan. This subsidy figure is greater if delinquent repayment costs are included.

In December 1982, 42 percent of the loans were delinquent. The evaluator saw this high delinquency rate as a result of the following circumstances: a perception among clients that 100-percent payback was not necessary; loan repayment schedules that were too short; and the clients' lack of motivation to pay back the loans because repeat loans were difficult to obtain. The total principal lost to the credit fund is estimated by the authors to be $22,946.

Throughout the operation of the program a control group, comprised of firms that had qualified but had not joined the program, was monitored. A comparison of a sampling of 48 PRODEME microenterprise participants and the control group (Table 20) shows that the control firms are similar to the firms receiving

PRODEME loans in the likelihood of having a female owner (20%), in the likelihood of having a second source of income (28%), and in the number of dependents in the household (5). They diverge in that assisted entrepreneurs are younger (38 versus 45) and better educated (10 years of schooling versus 5 1/2). Between the initial contact and the date of the study (6 months to 1 year after loan disbursement), the assisted firms markedly outperformed the unassisted control group.[28] The differential growth in total investment of the participating firms relative to the control was 23 percent, or $427 per firm. Investment in machinery and equipment exhibited a differential of 24 percent, or $473 per firm. Monthly expenditure for raw materials showed a differential of 4 percent, or $427 per firm. Full-time-equivalent employment increased by a net 63 percent, or 1.4 employees per firm. In addition, none of the assisted firms went bankrupt during the period, while 13 percent of control group firms failed.

Table 20. Characteristics of Microenterprise Owners Receiving DDF Loans and of a Control Group

Characteristic	Program Participants (N=48)	Control Group (N=20)
Women (%)	20	15
Age	38	45
Years of Education	10	5.6
Number of Dependents	5.0	4.8
Years of Experience	15	20.7
Having Other Income (%)	29	28

The 48 assisted microenterprises were broken into 4 groups of 12 according to their change in value added. The most successful program firms, those with increases above 96 percent, tended to be the smallest, those with the lowest absolute profits but with the greatest investment in machinery and equipment. These firms had the smallest loans (loan size per grouping averaged $1,816 to $2,104) and received slightly more visits from the coordinator before (18) and after (17) the loan. All the

[28]Ashe, p. 55.

owners of these firms attended the technical assistance courses. In the judgment of the coordinators, the effect of management advice on this group was pronounced: their management skills were judged to rise from "deficient-to-average" to the "highest of any group." Members of this group were on average the youngest (33 years old), the most predominatly male (91 percent), had the fewest dependents (4), the most education (11 years), the fewest years of experience (12), and the youngest firms (4.5 years old). These firms represented the sole source of owner income in the greatest number of cases (89 percent).

During the PRODEME program, a new job was created for each $1,121 extended as credit. The average full-time-equivalent wage of $94 per month was higher than the minimum wage of $85 but did not include the fringe benefits of the formal sector. Some 53 percent of the workers in the assisted firms were earning less than the minimum wage. The majority of these were apprentices or young workers who have little experience. The employees overall tended to be young (89 percent are under 35 years old) and not related to firm owners (in 80 percent of the cases). The most recent evaluation, done 17 months into the program, was encouraging: 8 to 10 of those employed before the loan was given were still working; 9 in 10 of those hired after loan disbursement were still working; and of those who had left, almost half had worked 7 months or longer. In addition, nearly three-quarters of the employees reported that they had learned new techniques and skills.

On average, each firm in the program received 16 visits from the coordinators before and 16 visits after loan disbursement. Roughly 85 percent of all clients attended the formal courses. The survey found that proficiency in each of the management skills promoted by PRODEME (bookkeeping, marketing, personnel management, and organization of production) rose significantly from the initial contact. It reached the highest level at the date of loan disbursal and fell somewhat thereafter. Interestingly, bookkeeping, a program requirement, was found to have been the most deficient skill at initial contact, the most proficient skill at loan disbursement, and the most deficient skill again at the date of the final evaluation.

Overall project costs are displayed in Table 21 and include bad debt, project expense, and capital erosion. The low total cost derives, in part, from the minimal erosion of the capital fund, a benefit of the modest Dominican inflation over the program's operation.

In the minimum benefit estimation (see Table 22), as well as the other benefit cases, we made great efforts to fully reflect in our calculations the detailed employment information available. The profit estimation was based on the evaluator's "gross

Table 21. DDF/Dominican Republic Microenterprise Component Loan Portfolio and Lending Costs (1982 U.S. dollars)

Year	(1) Loans Paid Out	(2)[a] Loans Out-standing	(3)[b] % of All L.O.	(4)[c] Bad Debt	(5) DDF Administrative Expenses
1981	80,000	20,000	16.6	3,809	23,178
1982	83,226	100,823	83.4	19,137	46,356
Total	163,266	120,823	100	22,946	69,534

Year	(6) Inflation Rate(%)	(7)[d] Capital Erosion Index	(8)[e] Capital Erosion	(9)[f] Direct Costs	(10)[g] Total Cost
1981	7.5	.070	1,400	26,987	28,387
1982	7.2	.067	6,755	65,493	72,248
Total			8,155	92,480	100,635

[a]Average maturity of 1.2 years, with lending beginning in July 1981.
[b]Calculated from (2).
[c]Distributed by (3).
[d](7) = 1 - (1/1 + inflation rate).
[e](8) = (2) x (7).
[f](9) = 4) + (5).
[g](10) + (9).

Source: (6), International Monetary Fund, International Financial Statistics.

Table 22. DDF/Dominican Republic Microenterprise Component Benefit Synopsis (1981 US dollars)

Item	Minimum Case	Maximum Case	Most Likely Case
Wages	43,246	84,617	84,617
Profit, Interest, Rent	251,781	363,400	363,400
Training Benefit	8,570	8,071	8,071
Distributional Weight	-	42,309	42,309
less			
Opportunity Cost of Labor	(-51,816)	-	(-51,816)
External Economies			
Final Demand Linkage	-	89,603	89,603
Backward Linkage	-	20,993	20,993
Consumer Benefit	-	-	-
Diversion Benefit	-	-	-
Total Benefit	251,781	608,993	557,177
Total Cost	100,635		
Direct Cost	(92,480)		
Capital Erosion:	(8,155)		

profit" (sales minus purchased input) and received a time adjustment factoring in the speed with which the profit increases were produced. Total benefits in the minimum case, including a training benefit and netting out the opportunity cost of labor, equaled $251,771.

Because of the significantly lower failure rate of the assisted firms over the nonassisted control group (0% versus 13%), the benefits of those firms "saved" by the program were estimated down the line in the maximum case. Profits were similarly enhanced, because the control group witnessed a decrease in "gross profit" against the member firms' positive showing. A training benefit and distribution weight were assumed for the work performed by the apprentices, and, given the lack of new entrepreneurs in the program, the labor was considered to be without opportunity cost. A diversion benefit was witheld from the estimation because of the program's spotless failure rate, and benefits in the maximum case were estimated at $608,993.

The most likely case mirrored the maximum case except for subtraction of the opportunity cost of labor deriving from the wage value added, and totaled $557,177.

The internal rate of return was calculated for the microenterprise component in Table 23. Given both the magnitude of benefits relative to costs (5.6:1) and the prompt commencement of lending, net benefits were positive in both years of operation, with the internal rate of return approaching positive infinity.

6.2 Solidarity Group Component

The second part of PRODEME is the solidarity group component. It is modeled after two PISCES Phase I projects in El Salvador and India. These projects utilize credit groups formed by individual business owners to guarantee collectively the loans made and to build social and business networks within the area. Client participation is fostered at each stage in the program, with client responsibility required for efficient functioning. The objectives of the DDF solidarity groups are "empowerment through group experiences that reinforce entrepreneurship and grassroots advocacy; increasing income; and assisting large numbers of businesses at low cost."

The principal beneficiaries of solidarity group loans are triciclero (men--there are no female triciclero--who pedal heavy cargo trikes through the streets of Santo Domingo selling fruits, vegetables, and prepared foods, or collecting bottles, cardboard, and scrap metal), representing 83 percent of the groups (see Table 24). The work of a triciclero is strenuous,

Table 23. DDF/Dominican Republic Microenterprise Component Internal Rate of Return Calculation (1982 U.S. dollars)

Year	(1)[a] Benefit	(2)[b] Costs	(3)[c] Net Benefits	(4) Discount Factor	(5) Discount Net Benefit
1981	92,491	28,387	64,104	Because (3) never has a net negative year, Internal Rate of Return = positive infinity.	
1982	464,686	72,248	392,438		
Total	557,177	100,635	456,542		

[a]Most likely benefits over project life distributed by column (3) from Table 21.
[b]Column (10) from Table 21.
[c](3) = Column (1) - (2).

Table 24. Characteristics of PRODEME Solidarity Members

Characteristic	Tricicleros	Other
As Percentage of All Members	83	17
Women (%)	0	100
Age	30	38
Years of Education	4	4
Years of Residence in Santo Domingo	9.6	14
Years of Residence in Barrio	5.5	6.5
Working Hours per Week	48	47
Years at Current Occupation	5.3	8.7
Daily Family Income	$6.29	$6.87
Percentage of Family Income Earned Through Occupation	95	65
Personal Assets	$922.50	$1,035

dangerous, and has a low social status. The average triciclero works 6 days per week. The triciclero rents his trike (triciclo) from an agency for a fee of $.85 to $1.00 per working day and pays an additional $.14 per day garage fee. These vehicles tend to be in poor condition. Often the tricicleros are in debt to the rental agencies and borrow from them at interest rates of 8 percent per day! DDF provides triciclero group members with 1-year loans of $203 to purchase a new triciclo and to have a residual working capital of $17. These loans bear an interest rate of 24 percent ($49 for a $203 loan) and are repayable in 52 weekly installments. During the repayment period, the borrowers save between $.04 and $.33 per day; the loan repayment and interest is $.81 per day, $.04 to $.19 less than the daily rental charge; since most tricicleros keep their triciclos at home, there is an additonal daily saving of $.14. Since a new triciclo lasts at least 5 years, earnings for the 4 years following the repayment of the loan can be expected to increase by the annual rental cost.

The remaining 17 percent of the solidarity groups comprises women who are seamstresses and food vendors. DDF provides these members with loans of up to $203 to meet their working capital needs.

The members of solidary groups typically are established members in their communities. They are known as hard-working individuals with solid businesses. The average triciclero is 30 years old, is a male head of the household, has 4 years of education, immigrated to Santo Domingo 9.6 years ago, has lived in the barrio for 5.5 years, works 48 hours per week, and has been a triciclero for 5.3 years. The average "other" loan recipient is 38 years old, is a female head of the household, has 4 years of education, immigrated to Santo Domingo 14 years ago, has lived in the barrio for 6.5 years, works 47 hours per week, and has been at her current occupation for 8.7 years.

The average daily family income of a triciclero is $7.55, of which 95 percent is earned through the owner's business. Family income of the other clients averages $8.24 per day, of which 65 percent comes from the owner's enterprise. The assets of the other clients average $2,202, that of the tricicleros, $1,107. The other group members typically live in better furnished homes in better parts of the city than their triciclero counterparts.

The program is advertised through word of mouth and is clarified through meetings run by beneficiaries. Solidarity groups of five to eight business associates are formed or added to through agreement among the group members who share responsibility for loan repayment. Daily or weekly loan payments are made by members to the group president, who then makes weekly payments at barrio-level meetings with DDF staff. Should payment

not be made for 8 weeks, the delinquency is discussed among the coordinator, president, and the group. As a last resort, property purchased through the loan is repossessed.

The program is currently staffed by five full-time coordinators (two of whom were recently added) and a supervisor. All are young economists or economics students. The coordinators orient and train new groups, prepare the loan applications, collect payments, and troubleshoot groups with problems. Roughly 40 percent of the time of both the PRODEME credit analyst and the director is devoted to the solidarity group component. Technical assistance is provided informally through the exchange of ideas among group members and formally in the meetings of the client-initiated Dominican Association of Tricicleros. Solidarity group members, unlike those in the microenterprise component, can assume increasingly important roles within the program by participating in meetings or assuming a position of leadership either for their individual group or for the Association.

The solidarity group component has been evaluated twice since its start. By the time of the first evaluation, conducted in September 1981, 85 triciclero groups with a total of 600 members had been organized. Sixty-two of these groups had received loans. All loan payments were on schedule. At the time of the second evaluation in April 1982, lending had begun for the other working capital groups. At this time, 20 percent of all loans were found to be in arrears. By December 1982 the solidarity component had a 33-percent delinquency rate, and half of the coordinators' time was spent on loan collection and repayment problems. By this time the coordinators' overall ratings of the initial solidarity groups had fallen from a before-loan level of 4.92 (5 being highest) to a rating of 2.22.

The evaluator suggested five causes for this breakdown within the solidarity groups. First, the intergroup monitoring ended as more groups became involved in the the program. Second, it was discovered that the requirements for entry had been reduced or eliminated. As a result, groups comprised of members who often neither knew nor lived near each other were hastily formed. Third, the year-long payback period proved to be too lengthy, because most members had never had any credit experience lasting more than 1 week. Fourth, the coordinators found it virtually impossible to repossess the triciclos because the Foundation was not willing to back them. And fifth, the motivation to repay the loan was reduced because DDF did not grant second loans. The importance of the fifth cause is highlighted by the fact that 80 percent of the solidarity members desired a second loan. To its credit, the Association of Tricicleros has established its own loan fund of $1,350 which is used to meet the emergency needs of its members.

As a result of these findings, the program methodology was modified to increase the staff coordinators' participation in and regulation of the formation of potential groups and the dissemination of information to them. The DDF coordinator currently gives a 4-hour, two-part course on the program to newly formed groups, as well as on the responsibilities and the requirements entailed in membership. Those who are unqualified and those who lose interest drop out, necessitating the recruitment of new members and the repetition of the course. Each group that is successfully formed elects a president and is officially registered in the program. This modification has resulted in higher ratings of the more recently formed groups (between 3.26 and 3.72). The program has also been modified through the elimination of several steps in the processing of loans. However, loan processing remains slow. Loan approval takes an average of 60 to 90 days, and loan disbursal an additional 30 to 60 days.

From May 1981 to December 1982, loans totaling $196,262 were disbursed to 158 solidarity groups. A total of 978 group members received financial assistance from DDF, with an average loan per member of $191. Administrative costs averaged $345 or 28 percent of an average $1,220 loan. With interest charges of 24 percent, an average borrower paid $293, implying a subsidy of $52 per loan. The subsidy is greater if late payment costs are included. Delinquent principal totaled $41,912.

Breaking down the recorded cost, personnel expenses (including 40 percent of the time of the credit analyst and PRODEME director) equaled 8 percent of loan value, direct administrative costs (including transportation, purchase of motorcycles and equipment, materials, and so on) represented 6.4 percent, and indirect administrative costs (the salaries of part-time DDF personnel) equaled 5.7 percent.

When polled on their opinions of the program, 60 percent of the solidarity group members preferred the group loans to individual loans. More than 80 percent of the members would have liked a second loan from DDF; 74 percent would prefer to do so with the same group. Forty percent of all participants wanting a second loan and 67 percent of all tricicleros wanting one would use it to start a new business. These tricicleros would like a new business that would take them off the streets into a fixed location. Roughly half of the members had used up their working capital amounts, and many of these clients had turned again to expensive informal credit sources.

More than half of the solidarity clients reported that participation in their group and the Association has helped their business "a lot," primarily as a result of their procurement of a

loan through the group and the personal lending among group members. About one-quarter of both groups thought their participation did not help at all. The remainder voiced the positive responses that it helped "somewhat" or "a little." More than half are actively involved in the program by serving as president of a group, forming a new group, or attending barrio-level meetings. Two-thirds of the group presidents would be willing to serve again. Although virtually all members entered with a history of little or no participation in any other organization, member participation in community projects rose significantly during the operation of the program.

The coordinators report the following positive characteristics: frequent meetings among one-third of the groups to share ideas and problems; attendance of one-fifth of the groups in barrio-level meetings; good solidarity in one-half of the groups; strong leadership in three-quarters of the groups; and high levels of mutual support in one-third of the groups. They report the following negative aspects: one or more late payments in 85 percent of the groups; major divisions in one-third of the groups; the selling or pawning of triciclos by at least one member in one-quarter of the groups; and the repossession of a triciclo or removal of a member in one-third of the groups.

A May 1982 study reported that the average income of the older groups had increased from $5.35 per day to $8.67, or 62 percent. However, in a survey 4 months later, the average member income had decreased from $6.30 before the loan to $5.54, or 11 percent. The majority of group members reported in September 1982 that economic conditions had turned unfavorable, that costs had increased, and that they were selling more but earning less. Therefore, the evaluator suggested that the most recent income decreases were either a result of the declining Dominican economy or a difference in motivation or entrepreneurial skill between the older and newer groups. Another interpretation is that increased competition was responsible for this decrease in earnings. According to ACCION International/AITEC, the triciclo rental firms reported that business continues as usual: more people wish to rent triciclos than are available. The DDF has, in effect, added 812 new tricicleros to the Santo Domingo area.

Table 25 presents data on the loan portfolio and lending costs of the solidarity component, including DDF expenses, bad debt, and capital erosion. As with the microenterprise component, this part of DDF benefited markedly from the low inflationary environment in which it operated.

In terms of benefits (Table 26), the solidarity component generated no new employment (and hence, no opportunity cost of labor), wage value added, training benefit, or backward linkage in any of the estimated cases. This is because the tricicleros

Table 25. DDF/Dominican Republic Solidarity Component Loan Portfolio and Lending Costs (1982 U.S. dollars)

Year	(1) Loans Paid Out	(2)[a] Loans Out-standing	(3)[b] % of All L.O.	(4)[c] Bad Debt	(5) DDF Administrative Expenses
1981	91,337	34,252	24.5	5,127	15,690
1982	104,925	105,814	75.5	15,800	21,906
	196,262	140,066	100.0	20,927	37,596

Year	(6) Inflation Rate (%)	(7)[d] Capital Erosion Index	(8)[e] Capital Erosion	(9)[f] Direct Costs	(10)[g] Total Costs
1981	7.5	.070	2,398	20,817	23,215
1982	7.2	.067	7,090	37,706	44,796
			9,488	58,523	68,011

[a]Average maturity of 1 year, with lending beginning in May of 1981.
[b]Calculated from (2).
[c]Distributed by (3).
[d](7) = 1 - (1/1 + inflation rate).
[e](8) = (2) x (7).
[f](9) = (4) + (5).
[g](10) = (8) + (9).

Source: (6), International Monetary Fund, International Financial Statistics.

and the other working capital members are self-contained merchant entrepreneurs.

Profits had two components. The first was the incremental income of the members, based on information from two surveys. The findings of both surveys were applied to our profit calculation according to the periods they covered. The second profit component quantifies the savings on rental fees resulting from the purchase of triciclos.

Table 26. DDF/Dominican Republic Solidarity Component Benefit Synopsis (1981 U.S. dollars)

Item	Minimum Case	Maximum Case	Most Likely Case
Wages	-	-	-
Profit, Interest, Rent	258,011	258,011	258,011
Training Benefit	-	-	-
Distribution Weight	-	134,511	134,511
less			
Opportunity Cost of Labor	-	-	-
External Economies			
Final Demand Linkage	-	51,602	51,602
Backward Linkage	-	-	-
Consumer Benefit	-	95,178	95,178
Diversion Benefit	-	4,141	4,141
Total Benefit	258,011	543,443	543,443
Total Cost	68,011		
Direct Cost	(58,523)		
Capital Erosion	(9,488)		

The strong social impact of the program is fully reflected in the maximum and most likely case estimates. There, the impact of the increased competition among area tricicleros is particularly prominent in our consumer benefit. In addition, the component's success in reaching the poorest segments of society substantially weights the benefits accompanying the favorable redistribution of income. Added together with a final demand linkage and diversion benefit, benefits in the most likely case equaled $545,443.

Based on the summary of benefit-cost calculations presented in Tables 26 and 27, the solidarity component is arguably the best performer in our sampling. With total benefits exceeding total costs by greater than a factor of 8 and with benefits more than 6 times costs in the first year of operations, the internal rate of return approaches positive infinity.

Table 27. DDF/Dominican Republic Solidarity Component Internal Rate of Return Calculation (1982 U.S. dollars)

	(1)[a]	(2)[b]	(3)[c]	(4)	(5)
Year	Benefit	Costs	Net Benefits	Discount Factor	Discount Net Benefit
1981	133,193	23,215	109,978	Because (3) never has net negative year, Internal Rate of Return = positive infinity.	
1982	410,452	44,796	365,656		
Total	543,645	68,011	475,634		

a Most likely benefits over project life distributed by column (3) from Table 26.
b Column (10) from Table 26.
c Column (1) - (2).

A. Minimum Case

1. Wage Value Added = change in paid employment x average wage

   a. Employment

      Solidarity component: no new employment.

      Microenterprise component: 1.4 new employees per firm = 141 new employees for 101 firms [p. 57].[29]

   b. Wage value added

      Solidarity component = 0.

      Microenterprise component: Average full-time-equivalent salary of $94 per month [p. 67]; average duration of client firms in program [calculated from Table 1]: 9.4 months; 9 in 10 of new employees still working [p. 69]:

      (1) 141 employees x $94 salary x 1.0 failure adjustment x .54 time adjustment x .95 adjustment for new employees who left x 9.4 months = $63,913.

          8 of 10 before-loan employees still working [p. 69]; average firm with 2.6 employees: 2/10 x 2.6 x 101 = 53 employees lost.

      (2) 53 employees lost x $94 salary x 9.4 month = (-$46,813); of those who left, 1/2 worked 7 months or longer [p. 69].

      (3) 53 x 1/2 x $94 x 7 months = $17,431; therefore, 1/2 of those who left worked for under 7 months.

      (4) 53 x 1/2 x $94 x 3.5 months = $8,715.

      Wage value added from microenterprise component:

      1 + 2 + 3 + 4 = $63,913 - $46,813 + $17,431 + $8,715 = $43,246

2. Profit, Interest, Rent

   Solidarity component: Profit based on May 1982 and September 1982 income surveys [pp.31-32].

---

[29]All citations of page and table numbers are from Ashe.

The original 42 tricicleros had income increases of $3.32 per day from July 1981 to May 1982 [p.32]. Member income had decreased by $.76 per day by September 1982, extrapolated for 978 members for 2.4 months (9.4 month average duration of members in program, minus 7 months of May to December 1982).

(1) $3.32 per day x 978 members x .98 failure adjustment x 2.4 months x 26 days/month = $198,558.

(2) (-$.76) per day x 978 members x .98 failure adjustment x 4 months x 26 days x .5 time adjustment = -$37,878, minus income decrease of $.76 per day for 3 months (September to December 1982).

(3) (-$.76) per day x 978 members x .98 failure adjustment x 3 months x 26 days/month = -$56,816.

Each triciclero buys a triciclo with loan having pay-back terms of $.81 per day for 1 year [p.12]. Each triciclo lasts 5 years [p. 34]; therefore, the actual cost to the owner of a triciclo is 1/5 of $.81 per day. Hence there is a savings of 4/5 of $.81 per day.

Total tricicleros = 83% of 978 members = 812 tricicleros; 1/4 of triciclero groups with at least one pawner = 1/4 (812/6 members per group) = 34 pawners or sellers; 812-34 = 778 tricileros who did not pawn or sell.

(4) 778 tricicleros x 4/5 ($.81 per day) x .98 failure adjustment x 312 days/year = $154,147.

Solidarity component profit: 1 - 2 - 3 + 4 = $258,011.

Microenterprise component: Profit based on "gross profit" [Table 20]; gross profit increase of $312/month per firm; 70% of gross profit increase occurring between initial contact and loan disbursement.

Microenterprise profit: 101 firms x $312/month x 1.0 failure adjustment x .85 time adjustment x 9.4 months = $251,781

3. Training Benefit = change in apprentices x .5 average apprentice wage.

Solidarity group component = 0.

Microenterprise component: 53% of workers are apprentices; majority of apprentices earn less than minimum wage of $85/month.

(1) 141 employees x .53 apprentices x .5 ($70 wage) x 1.0 failure adjustment x .54 time adjustment x .95 adjustment for new employees who left x 9.4 months = $12,613.

(2) 53 employees lost x .53 apprentices x .5 ($70 wage) x 9.4 months = (-$9,158).

(3) 53 x .53 x 1/2 x .5 ($70) x 7 = $3,410.

(4) 53 x .53 x 1/2 x .5($70) x 3.5 = $1,705.

Training benefit of microenterprise component: 1 + 2 + 3 + 4 = $12,613 - $9,158 + $3,410 + $1,705 = $8,570.

4. Opportunity Cost of Labor

Solidarity component: No new employment = 0.

Microenterprise component: Equal to microenterprise wage value added plus training benefit: $43,246 + $8,570 = $51,816.

5. Total Benefits = wages + profit + training benefit - opportunity cost of labor:

Solidarity component: $258,011 + 0 + 0 = $258,011.

Microenterprise component: $43,236 + $251,781 + $8,570 - $51,816 = $251,771.

B. Memorandum Items

1. Bad Loans

Solidarity component: 33% of loans delinquent x 1/2 not returning x 68% of total loan value of $186,514 = .33 x 1/2 x .68($186,514) = $20,927.

Microenterprise component: 44% of loans delinquent x 1/2 not returning x 66% of total loan value of $158,932 = .44 x 1/2 x .66($158,032) = $22,946.

2. Technical Assistance

Solidarity component: Technical assistance difficult to assess; provided informally among group members and formally in meetings of the Association; coordinators worked to increase group cohesion and performance. Coordinators' overall ratings of solidarity groups fell from initial contact (4.52, with 5 highest) to December 1982 (2.99) [Table 5].

Microenterprise component: Technical assistance provided by staff coordinators on one-to-one basis before and during loan period; level of management rose from coordinators' ratings of 1.6 at first contact to 2.9 at date of loan to 2.6 in December 1982.

Three-quarters of new employees (106 workers) reported learning new techniques and skills [p.69].

C. Maximum Case

1. Wage Value Added = change in paid employment x average wage

a. Employment

Solidarity component: No new employment.

Microenterprise component: 141 new employees. Of control firms 13% failed [p. 54]; DDF is therefore responsible for saving 13% of assisted firms:

13% x 101 firms = 13 firms x 2.6 employees per firm = 34 employees saved.

Total microenterprise employment: 141 + 34 saved employees = 175 employees.

b. Wage Value Added

Solidarity component = 0.

Microenterprise component

(1) 141 employees x $94 salary x 1.0 failure adjustment x .54 time adjustment x .95 adjustment for new employees who left x 9.4 months = $63,913.

(2) 2.6 original employees per firm x $94 salary x 1.0 failure adjustment x 9.4 months x 13 saved firms = $29,854, minus: 2/10 x 2.6 employees per

firm x (10 firms + 13 saved firms) = 59 employees lost.

(3) 59 employees lost x $94 salary x 9.4 month = (-$52,132), plus, of those who left, 1/2 worked 7 months or longer.

(4) 59 x 1/2 x $94 x 12 months = $33,276; plus, of those who left, 1/2 worked fewer than 7 months.

(5) 59 x 1/2 x $94 x 3.5 months = $9,706.

Wage value added from microenterprise component:

1 + 2 + 3 + 4 + 5 = $63,913 + $29,854 - $52,132 +

$33,276 + $9,706 = $84,617.

2. Profit, Interest, Rent

Solidarity component: Same as minimum case = $258,011.

Microenterprise component: Profit derived from Ashe, Table 17.

Control group showed $86 decrease in monthly value added with gross profit approximately two-thirds of value added [Table 17]; control group monthly gross profit decrease of ($86 x 2/3) = $57.

Assisted firm monthly gross profit increased by $312 plus $57 = $369.

(1) $369 per month x (101 firms + 13 saved firms) x 1.0 failure adjustment x .85 time adjustment x 9.4 months = $297,779; plus: profit of 13 saved firms = initial gross profit per firm = $537 per month [Table 20].

(2) $537 per month x 13 saved firms x 9.4 months = $65,621.

Microenterprise component profit: 1 + 2 = $363,400.

3. Training Benefit

Solidarity component = 0.

Microenterprise component: Same as minimum case, except 13 saved firms are factored into calculations:

(1) 141 x .53 x .5 ($70) x 1.0 x .54 x .95 x 9.4 = $12,613.

(2) 59 employees lost x .53 x .5($70) x 9.4 = (-$10,288).

(3) 59 x .53 x 1/2 x .5($70) x 7 = $3,831.

(4) 59 x .53 x 1/2 x .5($70) x 3.5 = $1,915.

Training benefit of microenterprise component: 1 + 2 + 3 + 4 = $12,613 - $10,288 + $3,831 + $1,915 = $8,071.

4. Distribution Weight

Solidarity component: A 1.5 weighting (50% increment) of income received by the bottom 30% in the national income distribution applied to all direct value added:

(0 + $269,022 + 0) x .5 = $134,511

Microenterprise component: A 1.5 weighting (50% increment) of income received by the bottom 30% in the national income distribution applied to one-half the wage bill:

$84,617 x .5 = $42,309.

5. Opportunity Cost of Labor

For new entrepreneurs only:

Solidarity component = 0.

Microenterprise component = 0.

6. External Economies

a. Final demand linkage = .2 x (wages + profit):

Solidarity component = .2 (0 + $258,011) = $51,602.

Microenterprise component = .2 ($84,617 + $363,400) = $89,603.

b. Backward linkage = incremental sales less value added of all nontrading firms adjusted for a 30% opportunity cost of labor and foreign exchange:

Solidarity component: All solidarity members are trading firms and hence have no net backward linkage.

Microenterprise component:

Incremental sales = $496 increased monthly sales per firm [Table 17] x 101 firms x 1.0 failure adjustment x .76 time adjustment [Table 25] x 9.4 months = $358,018.

New value added = $427 increased monthly value added per firm [Table 17] x 101 firms x 1.0 failure adjustment x .81 time adjustment [Table 25] x 9.4 months = $328,028.

Microenterprise component backward linkage = ($358,018 - $328,028) x .70 import adjustment x 1.0 trading firm adjustment = $20,993.

c. Consumer Benefit

Solidarity component: Between May 1982 study and September 1982 survey, member income dropped $.76 per day, ostensibly owing to increased competition among tricicleros. Solidarity component consumer benefit = ($.76 per day x 978 members x .98 failure adjustment x 3 months (Sept. to Dec. 1982) x 26 days/month) + ($.76 per day x 978 members x .98 failure adjustment x .5 time adjustment x 4 months (May to Sept. 1982) x 26 day/month:

$57,107 + $38,071 = $95,178.

Microenterprise component = 0.

7. Diversion Benefit

Solidarity component: 812 tricicleros, 1/4 of triciclero groups with at least one pawner = 1/4 (812/6 members per group) = 34 pawners.

Solidarity component diversion benefit: 34 pawners x .6 ($203 value) = $4,141.

Microenterprise component = 0.

8. Total Benefits = wages + profit + training benefit + distributional benefit + external economics + diversion benefit - opportunity cost of labor:

Solidarity component total benefits = 0 + $258,011 + 0 + $134,511 + $146,982 + $4,141 - 0 = $543,645.

Microenterprise component total benefits = $84,617 + $363,400 + $8,071 + $42,309 + $110,596 + 0 - 0 = $608,993.

D. Most Likely Case

1. Wage Value Added:

Same as maximum case:

Solidarity component = 0.

Microenterprise component = $84,617.

2. Profit, Interest, Rent:

Same as maximum case:

Solidarity component = $258,011.

Microenterprise component = $363,400.

3. Training Benefit:

Same as maximum case:

Solidarity component = 0.

Microenterprise component = $8,071.

4. Distribution Weight:

Same as maximum case:

Solidarity component = $134,511.

Microenterprise component = $42,309.

5. Opportunity Cost of Labor:

Same as minimum case:

Solidarity component = 0.

Microenterprise component = $51,816.

6. External Economies:

Same as maximum case:

a. Final demand linkage

Solidarity component = $51,602.

Microenterprise component = $89,603.

b. Backward linkage

Solidarity component = 0.

Microenterprise component = $20,993.

c. Consumer benefit

Solidarity component = $95,178.

Microenterprise component = 0.

7. Diversion Benefit

Same as maximum case:

Solidarity component $4,141.

Microenterprise component = 0.

8. Total Benefit

Solidarity component: 0 + $258,011 + 0 + $134,511 + 0 + $146,780 + $4,141 = $543,645.

Microenterprise component: $84,617 + $363,400 + $8,071 + $42,309 - 51,816 + $110,596 + 0 = $557,177.

7. THE RURAL DEVELOPMENT FUND (FDR) PROGRAM IN PERU

The Rural Development Fund (FDR) Program of the Industrial Bank of Peru (BIP), the sole non-PVO project of the five being reviewed, was initiated in November 1975 in the bank's Sierra Departments of Cuzco, Junin, Puno, and Ayacucho.[30] Program funding totaled $10 million, of which $4 million came from BIP and $6 million was granted from AID. Initial lending operations were small. In August 1977, the program received an additional $2.3 million from AID and $1.2 million from the Government of Peru (GOP); expanded operations to Cajamarca, Huancavelica, Apurimac, and Huanuco; and increased lending volumes at all branches. In May 1979, Phase II of the program was undertaken with funding of $8 million from AID and $2.7 million from GOP. The FDR program at this point extended operations for a final time to a total of 19 departments. By mid-1981, however, the credit fund dropped sharply, necessitating an extensive cutback in lending. In response to this, BIP transferred $4.8 million of its own resources to the program's fund, thereby allowing FDR to continue its credit operations. Total funding up through 1981 was $29 million; all these funds were used as FDR's credit resources.

The objectives of FDR Phase I and Phase II were to develop and strengthen rural enterprises, thereby increasing the self-sustaining levels of economic activity; to create new employment; and to generate income and to improve its distribution. Specifically, FDR was to institutionalize credit and technical assistance programs so as to develop, finance, and manage new or existing small-scale enterprises in industry, services, and commerce. The following loan eligibility criteria for firms were established prior to program implementation: no other access to credit on reasonable terms; an artisan, service, small-scale industrial, or agribusiness firm; a loan of less than $60,000; the loan amount would be no greater than 90 percent of the total investment; and the loan would be fully collateralized through the machinery to be purchased with the loan or the owner's or cosigner's personal assets.

---

[30]Based primarily on the evaluation report by Susan Goldmark, Jean-Jacques Deschamps, Joseph Recinos, and Beatrix Glover, An Impact Evaluation of the Industrial Bank of Peru's Rural Development Fund (Washington, D.C.: Development Alternatives, Inc., February 1982).

7.1 Program Implementation

FDR operated as one-person units within each of BIP's branches, each having its own coordinator, portfolio, customers, and promotional activities. FDR was characterized by enormous growth during its first 5 years and by its increasing importance within the total lending operations of BIP. Combined with the preferential status and strong operational support that FDR personnel received from Lima, in the form of all-expenses-paid, 2-day seminars in Lima each month and higher than average salaries, this created tensions in the branch offices, which often resulted in FDR loan-processing delays. These difficulties were resolved in 1980 through the complete institutionalization of FDR within BIP and the removal of FDR staff at branch level.

The FDR progam was promoted through announcements, a promotional film, word of mouth, door-to-door contact, and the solicitation of clients in areas affected by natural disasters. These activities, originally directed by the central office in Lima, were increasingly being initiated by the local branches of the program.

The client selection process was relatively short and consisted of review of a completed application form, as well as a feasibility visit (lasting on average 4 hours) by a staff member to the prospective borrower. In the program's early stages, the application forms often were submitted without the necessary profit/loss statement, balance sheet, and employment information. In response to this, a balance sheet from a certified accountant became an FDR requirement. This has forced borrowers to adopt elementary accounting practices, but the additional paperwork also has slowed down the lending process. The average time between loan application and loan approval is 78 days, and the average time between loan approval and disbursal is 32 days. Because BIP is strongly decentralized, the majority (80 percent) of lending decisions occur at the branch level, with only the largest loans requiring authorization from the central administration. Frequently, loans were disbursed directly to the supplier to prevent the misuse of loan funds by the client. Repeat loans (58 percent of all loans) were granted by increasing the existing loan rather than by processing a new one.

The loans were not monitored during the program unless payment was delinquent. For each month that payment was overdue, the client was sent a notice to this effect. After a loan was 3 months overdue, the bank's delinquent loan committee recommended that one of the following actions be taken: a 1-month extension, managerial assistance, or default coupled with legal proceedings.

7.2 Program Impact

Between 1975 and 1981, FDR disbursed loans totaling $42,331,200. Between 1978 and 1981, 6,253 loans totaling $37,227,000, or 88 percent of total loan value, were made. Extrapolated to the entire program, roughly 7,110 loans were disbursed. Average loan size between 1978 and 1981 was $5,953. Of these loans, 60 percent were for less than $2,584, with only 10 percent for more than $12,400. Over this period, however, the number of small loans dropped from 75 percent of total loans in 1978 to 43 percent in 1981. Approximately 60 percent of the loans during this period were used to purchase fixed assets, with the remaining 40 percent going for working capital.

The interest charged on loans during 1975 and 1981 was at an average negative real rate of 23 percent. As a result of this negative rate, the credit fund rapidly decapitalized. The actual rate charged on loans progressed upwards throughout the program and was 34 percent for loans to artisans, 40 percent for loans under $30,000, and 49 percent for loans above $30,000 in 1981. Loan repayment terms ranged from under 2 years to over 5 years in duration, with generous 3-year schedules granted to many solely working capital loans. The average maturity was 3.0 years. The delinquency rate is estimated to be between 7 and 8 percent of the loans. This high repayment rate would seem to be related to (1) the prospect of a repeat loan, (2) the light repayment burden because of inflation, and (3) the bank's repossession of machinery and personal assets on a number of loans overdue by more than 6 months.

The evaluators' field survey on 85 subborrowers in four branches (Huancayo, Huanuco, Cuzco, and Cajamarca), found 92 percent of their firms to be sole proprietorships that had been operating an average of 8 years. Of these firms, 71 percent had urban locations. The average term of the loans to these clients was 4.25 years, suggesting that the firms in this sample are larger than the overall average. Forty percent of the 85 clients reported having received a loan from other sources prior to FDR. Of the 85 clients, 22 percent had received formal credit previously, usually through BIP. Almost all of the entrepreneurs were firmly established as members of the business community prior to their loans. Most had worked as employees in other firms (29 percent), in their family firm (15 percent), or had owned another business. Roughly one-quarter of the businesses were owned by women, who often had inherited them from their husbands. Of the surveyed clients, 70 percent reported that they had no other source of income.

The limited technical assistance provided by the program aided prospective clients in completing the various components of

the loan application. Of the surveyed clients, 21 percent reported having received assistance on the feasiblity study; 60 percent received help on the loan application; 22 percent received accounting assistance; 9 percent received marketing assistance; and 4 percent received advice on product process.

Of the firms surveyed, 60 percent were in the industrial sector; 23 percent were in the service sector; 8 percent were artisans; 4 percent were in agriculture; and 2 percent were in commerce. Seventeen percent of the firms produced intermediate goods, and 11 percent manufactured capital goods. In the survey (conducted at the end of 1981), the average declared sales of these firms were $33,605, showing an increase of 160 percent between the time of the client's first FDR loan and the date of the survey. Annual value added per firm was $16,000 at the date of the survey, and each dollar of the FDR loan was found to have produced an average of $0.29 value added per year, with the average firm in the program for 2.6 years. These large increases despite a recession during 1976-1978 reflect the huge expansion that occurred in the Cuzco alpaca firms; 93 percent of all surveyed owners reported that output had increased.

Beyond its economic benefits, FDR has had a significant institutional impact. It demonstrated to a previously skeptical Industrial Bank of Peru that small business lending is in fact less risky than fully collateralized lending to larger borrowers (lower default rate, less delayed payment). However, the administrative cost per loan dollar year is significantly higher for the small business loan. Whether there would be low default and substantial demand at much higher interest rates (which would cover the rate of inflation plus administrative costs and a return on capital) still is to be tested. Most categories of BIP lending are at negative real interest rates. But the FDR experience has been sufficiently positive for BIP to make small business lending a top priority in its next 5-year plan. Assisted in part by a line of credit from the World Bank, fully half of its new loans are going to the small enterprise sector.

Table 28 presents data on the loan portfolio--loans paid out and total value of the portfolio by year in current and constant dollars--and the cost of lending. The cost of lending consists of four elements of direct cost and one element of invisible cost. The four direct costs are as follows: (1) AID grant expenditures averaging $100,000 per year on vehicles, computers, training seminars at home and abroad for FDR staff, and radio and TV promotion; (2) FDR staff compensation, estimated at 1981 prices (the program supervisor in Lima, $12,000 per year, one coordinator per branch at $3,600, and three additional Lima staff in 1980 and 1981 at $7,200 each); (3) time spent by other branch bank staff other than the FDR coordinator, estimated at $31 per loan; and (4) unrecoverable debt, estimated at 2 percent of the

Table 28. FDR/Peru Loan Portfolio and Lending Costs (thousands of 1981 U.S. dollars)

Year	(1) U.S. Price Inflator (1981=100)	(2) Loans Paid Out	(3)[a] Loans Out-standing	(4)[b] L.O. (1981 prices)	(5)[c] As % of All L.O.
1975	169	67.0	33.5	56.6	0.1
1976	159	1,876.2	1,004.6	1,597.1	1.9
1977	150	3,116.6	3,500.5	5,250.8	6.1
1978	140	4,351.1	7,200.9	10,081.1	11.7
1979	125	6,023.7	11,417.2	14,271.5	16.7
1980	110	18,685.6	21,275.9	23,403.5	27.3
1981	100	8,211.6	30,990.6	30,990.6	36.2
Total		42,331.8	75,423.1	85,651.2	100.0

	(6)[d] AID Expenditures		(8)[f]	(9)[g]	(10)[h]
Year	Current Prices	1981 Prices	FDR Salaries	Other Salaries	Bad Debt
1975	100	169	4.4	0.2	0.6
1976	100	159	26.4	4.2	12.0
1977	100	150	33.0	13.4	37.7
1978	100	140	40.8	25.8	72.4
1979	100	125	71.0	36.8	103.6
1980	100	110	102.0	60.2	169.2
1981	100	100	102.0	79.8	224.5
Total	700	953	379.6	220.4	620.0

Year	(11) Peru Inflation Rate(%)	(12)[i] Capital Erosion Index	(13)[j] Value of Capital Erosion	(14)[k] Direct Costs	(15)[l] Total Cost
1975	23.6	.191	10.6	174.2	184.8
1976	33.5	.291	464.8	201.6	665.9
1977	38.1	.276	1,449.2	234.1	1,683.5
1978	57.8	.366	3,689.7	279.0	3,969.0
1979	66.7	.400	5,708.6	336.3	6,044.9
1980	59.2	.372	8,706.1	441.5	9,147.6
1981	75.4	.430	13,326.0	506.2	13,832.2
Total			33,355.0	2,173.0	35,528.0

[a]Average maturity of 3 years applied to (2) based on the year midpoint.
[b](4) = (3) x (1).
[c]Calculated from (4).
[d]See text, p. 97.
[e]Inflation adjustment = (1) x (6).
[f]From text, expressed in 1981 prices.
[g]$31 per loan in 1981 prices times 7,110 loans from Goldmark, the total of $220,400 distributed by (5).
[h]One-half of long-term arrears rate of 1981 portfolio, $31 million times 2%, with the total of $620 thousand distributed by (5).
[i](12) = 1 - (1/1 + inflation rate).
[j](13) = (4) x (12).
[k](14) = (7) + (8) + (9) + (10).
[l](15) = (13) + (14).

Sources: (1), (11), International Monetary Fund, International Financial Statistics.
(2), Goldmark et al., Impact Evaluation, p. 31.

value of the 1981 loan portfolio. The last invisible cost element dwarfs the direct costs by a factor of seven; it is the capital erosion that occurs in a highly inflationary environment. Measured against an interest income of about $4.8 million over 7 years, FDR suffered $33.4 million of capital erosion.

7.3 Program Benefit Estimates

The benefit estimates are based on performance figures of the 85 enterprises that the evaluation team surveyed. Our benefit-cost estimates are summarized in Table 29. Our figures for direct value added are the same in all three cases. With respect to the opportunity cost of labor, in the minimum case we assumed that foregone income to paid workers and apprentices was the average wage rate and double that for new entrepreneurs. In the maximum benefit estimate we assumed that only the entrepreneurs had an opportunity cost, while in the most likely case we assumed that the entrepreneur, apprentices, and half the paid workers would have been employed elsewhere.

With respect to external economies, the principal difference between the maximum and most likely cases is again the size of the opportunity cost of the resources used in those firms indirectly stimulated by the project.

The most arbitrary element of the estimates is the diversion benefit, set at 5 percent of loans outstanding in the most likely case and 10 percent in the maximum case. With loans as cheap as these, the incentive to employ the proceeds in a variety of non-designated uses is great. These very low figures were chosen for two reasons. Neither the FDR staff nor the evaluation team found evidence of entrepreneurs having shunted the funds elsewhere. Furthermore, the jump in output in the designated activities has been so high as to be inconsistent with any significant leakage.

Finally, in Table 30 we calculate the ultimate benefit-cost measure that brings in the element of time. Surprisingly, although benefits exceeded costs by only 3 percent, the internal rate of return is 136 percent. This is because benefits commenced at virtually the same time as costs, reflecting the advantage of zero startup time when such a scheme is attached to an on-going lending agency. If there are unreported costs in 1974, 1975, or 1976 they would substantially lower the internal rate of return. On the other hand, we have not taken into account the estimate by Goldmark, et al. that incremental sales were underreported by clients by 40 percent.[31]

---

[31]Goldmark et al., Impact Evaluation, p. B-4.

Table 29. FDR/Peru Benefit Synopsis
(thousands of U.S. dollars)

Item	Minimum Case	Maximum Case	Most Likely Case
Wages	5,120	5,120	5,120
Profit, Interest Rent	19,222	19,222	19,222
Training Benefit	142	142	142
Distribution Weight	-	2,631	1,351
less			
Opportunity Cost of Labor	(-8,692)	(-3,287)	(-6,106)
External Economies			
Final Demand Linkage	-	5,373	3,224
Backward Linkage	-	17,879	9,417
Consumer Benefit	-	-	-
Diversion Benefit	-	8,565	4,283
Total Benefit	15,792	55,645	36,653

Total Cost	35,527
Direct Cost	(2,173)
Capital Erosion	(33,355)

Table 30. FDR/Peru Internal Rate of Return Calculation

Year	(1)[a] Benefits	(2)[b] Costs	(3)[c] Net Benefit	(4)[d] 136% Discount Factor	(5)[e] Discounted Net Benefit
1975	36.7	184.8	-148.1	1.0000	-148.1
1976	696.4	665.9	30.5	.4239	12.9
1977	2,235.8	1,683.9	551.9	.1795	99.1
1978	4,288.4	3,969.0	319.4	.0761	24.3
1979	6,121.1	6,044.9	76.2	.0322	2.4
1980	10,006.3	9, 147.6	858.7	.0137	11.8
1981	13,268.4	13,832.2	-563.8	.0058	-3.3
	36,653.1	35,528.0	1,126.1		0.9

[a]Most likely benefits over project life distributed by column (5) from Table 28.
[b]Column (15) from Table 28.
[c](3) = Column (1) - (2).
[d](4) = $1/(1 + 1.36)^t$.
[e](5) = (3) x (4).

A. Mimimum Case[32]

1. Wage Value Added = change in paid employment x average wage

   a. Paid employment

      210 jobs were created in 85 surveyed firms, of which 137.5 were salaried employees [p. 62] or 1.62 per firm. [Goldmark estimates there were 3,000 firms]. Average firm has been in the program for 2.6 years [Annex L].

   b. Average wage

      The average wage bill of the 85 firms was $3,092 for 3.74 paid workers [pp. 50, 62].

[32]All citations of pages, tables, and annexes refer to Goldmark et al.

c. Wage value added

3,000 firms x 1.62 new paid workers x $827 average wage x 2.6 years average firm in receipt of a loan x .5 time adjustment x .98 failure adjustment = $5,120,486.

2. Profit, Interest, Rent

"Gross income" or value added was generated at 29¢ per loan dollar per year [pp. 50, 52]. From our Table 28 we have calculated the latter at $85,651,200:

$85,651,200 x .29 value added coefficient x .98 failure adjustment minus wage value added $5,120,486 = $19,221,585.

3. Training Benefit = change in apprentices x .5 average wage:

3,000 firms x .09 new apprentices per firm x 2.6 years in the program x .5 ($827) x .5 time adjustment x .98 failure adjustment = $142,255.

4. Opportunity Cost of Labor

New apprentices at $827 per year = 3,000 firms x .09 new apprentice per firm x 2.6 years x $827 x .5 time adjustment x .98 failure adjustment = $284,477.

New paid workers at their actual wages (from item 1.c above) = $5,120,486.

New entrepreneurs at twice the average wage rate = 3,000 firms x .26 new entrepreneurs per firm x 2.6 years x 2($827) x .98 failure adjustment = $3,287,226.

5. Total Benefits = wages + profit, interest, rent + training benefit - opportunity cost of labor:

$5,120,486 + $19,221,585 + $142,255 - ($284,477 + $5,120,486 + $3,287,226) = $15,792,137.

B. Memorandum Items

1. Interest

Total loan interest received by the FDR for the period 1975-1981 was approximately $4.8 million in 1981 dollars.

2. Unrecoverable loans

FDR does not write off bad loans.

Loans delinquent 3 months or more represented about 4% of loans outstanding in 1981, or $1,240,000.

Assume that one-half of the delinquent loans will be retrieved through court action; ultimate bad debts will be $620,000.

3. Technical Assistance

a. Technical assistance [based on Annex I total] to approximately 3,000 clients:

21% received assistance on feasibility study = 630 clients
64% received assistance on loan application = 1,920 clients
22% received assistance on accounting = 660 clients
9% received assistance on marketing = 270 clients
4% received assistance on product process = 120 clients
75% improved accounting system quality = 2,250 clients
83% improved marketing ability = 2,490 clients.

C. Maximum Case

1. Wage Value Added

Same as minimum case = $5,120,486.

2. Profit, Interest, Rent

Same as minimum case = $19,221,585.

3. Training Benefit

Same as minimum case = $142,255.

4. Distribution Weight

A 1.5 weighting (50% increment) of income received by the bottom 30% in the national income distribution applied to paid labor and apprentices: .5(5,120,486 + 142,255) = $2,631,370.

5. Opportunity Cost of Labor

   New entrepreneurs only: same as minimum case = $3,287,226.

6. External Economies

   a. Final demand linkage = .22 x direct value added:

      22($5,200,486 + $19,221,585) = $5,372,856.

   b. Backward linkage = new sales - value added x import content adjustment x for trading firms:

      $51,594,067 - $24,422,071 = $27,171,996 [value added/sales relationship p. 50] x .70 import coefficient x .94 trading firms adjustment = $17,879,173.

   c. Consumer benefit = 0.

7. Diversion Benefit

   Assume 10% of loans were diverted to other uses with benefits equal to 10% of loans outstanding:

   $85,651,200 x .10 = $8,565,120.

8. Total Benefits = wages + profit, interest, rent + training benefits + distributional benefit + external economies + diversion benefit - opportunity cost of labor:

   $5,120,486 + $19,221,585 + $142,255 + $2,631,370 + ($5,372,856 + $17,879,173) + $8,565,120 - $3,287,226 = $55,645,619.

D. Most Likely Case

1. Wage Value Added

   Same as minimum case = $5,120,486.

2. Profit, Interest, Rent

   Same as minimum case = $19,221,585.

3. Training Benefit

   Same as minimum case = $142,255.

4. Distribution Weight

   A 1.5 weighting (50% increment) of income received by the bottom 30% in the national income distribution, applied to the apprentices and half the paid labor:

   .5($142,555 + .5[$5,120,486]) = $1,351,248.

5. Opportunity Cost of Labor

   New entrepreneurs, apprentices, and half the paid labor, calculated as in the minimum case:

   $3,287,226 + $284,477 + $2,560,243 = $6,105,946.

6. External Economies

   a. Final demand linkage = maximum case less 40% for opportunity cost of labor and foreign exchange:

      $5,372,856 x .6 = $3,223,714.

   b. Backward linkage = new sales = value added x adjustment for trading firms x adjustment for opportunity cost of labor and foreign exchange.

      Another sample of firms in Huancayo [p. 47] showed purchased inputs as a lower proportion of sales (32.4%) than the sample of 85 firms (52.7%). In this estimate we re-estimate sales based on a purchased inputs coefficient of 42%:

      $41,118,611 - $24,422,071 = $16,696,540 x .94 x .6 = $9,416,849.

   c. Consumer benefit = 0.

7. Diversion Benefit

   One-half the maximum case, or 5% of loans outstanding: $4,282,560.

8. Total Benefits = wages + profit, interest, rent + training benefit + distributional benefit + external economies + diversion benefit - opportunity cost of labor:

   $5,120,486 + $19,221,585 + $142,255 + $1,351,248 + ($3,223,714 + $9,416,849) + $4,282,560 - $6,105,946 = $36,652,751.

8. COMPARATIVE ANALYSIS: SOME LESSONS

Before turning to an analysis of the comparative performance of our five projects, it will be helpful to set out a general model of the determinants of project success. In this context we can best appraise the significance of the lessons that these case studies yield.

Projects succeed when they cause an increase in output that is greater than the cost of the inputs they require. "Output" is net of any production lost as scarce resources employed elsewhere are drawn into the project's domain; the "cost of inputs" includes both the price of the input and the cost of delivery. Anything that raises the output response among assisted producers or lowers the cost of delivery will enhance the benefit-cost ratio.

Looking first at the benefit side, we can partition the controlling factors into two groups, namely, (1) the appropriateness of the inputs that are chosen relative to actual production needs, and (2) the responsiveness of the producers who receive these inputs. With respect to inputs, there are basically four types that affect the firm's output in one of two ways:

1. Working capital (meeting expenses that exceed sales) to permit the survival of the firm; we observe maintained sales.

2. Working capital to permit fuller use of existing fixed capacity; we observe increased sales.

3. Long-term finance for horizontal expansion (replication of fixed assets and working capital); we observe increased sales.

4. Long-term finance to enlarge fixed capital per worker (leading to cost reduction or better product quality); we observe increased unit profit margins.

5. Managerial knowledge to speed up the rate of throughput from the existing plant and labor force; we observe increased unit profit margins.

6. Technical knowledge to permit the introduction of a new product; we observe increased sales.

7. Combinations of 2 to 6.

If the inputs delivered do not fit existing production techniques or do not tap a market situation of excess demand, there will be

little output response. Many aid projects fail on these counts, perhaps most frequently because the managerial or technical knowledge being offered in fact does not have the potential to reduce costs.

The second factor determining the size of project benefits is client responsiveness. The principal factors here are the ability of the entrepreneurs, the external economic environment, and the specific incidence of government policies. Entrepreneurial absorptive capacity needs no elaboration. The external economic environment includes, in addition to the efficiency of the country's product and factor markets, the degree to which private disposable income is growing (expanding market demand), infrastructure development (particularly the road network), and the relative severity of foreign exchange-related constraints. The last element, specific policy incidence, is the only one that is controllable. It includes tariffs on equipment and inputs used by assisted producers relative to those of their larger scale competitors, access to foreign exchange, the nature and enforcement of labor legislation, the enforcement of sales and profit tax, and municipal licensing regulations.[33]

It is worth pausing a moment on the policy issue. Projects are no substitute for good policies. Not only are some policy improvements (e.g., creating equal access to foreign exchange) far cheaper than projects, the latter have the potential of increasing output from a comparatively small number of enterprises versus policy's impact on the entire population of producers. However, it is through the operation of a project that detailed information can best be gained concerning (1) how specific policies affect the functioning of microenterprise, (2) the best channels for improving policy, and (3) appropriate arrangements to ensure continuous feedback. Not least of all, projects are one of the best means for mobilizing support and getting the government bureaucracy to act. Refining policy and executing well-designed projects are thus complementary, not competitive, activities.

The third major determinant of the benefit-cost ratio operates on the denominator. Delivery cost is the outcome of the set of activities that are designed into the delivery system and the cost-effectiveness in carrying them out. Consider the delivery of credit. In one case designed activities may be no more than a

---

[33]For a comprehensive discussion of policy issues see Peter Kilby, Small-Scale Industry in Kenya, MSU Rural Development Paper No. 20 (East Lansing, Michigan: Michigan State University, 1982), Chapter IV.

single interview, a short on-site visit, registering of collateral, minimal postal follow-up on repayments, and foreclosure proceedings when required. In another delivery system activities may include an area census, a prescreening interview, three or four visits to provide assistance in developing accounts and projected cash flow for the loan application, and a dozen postloan visits (advisory and policing of repayment). With respect to implementing these two delivery systems, the central office may be large or small, the field staff can be college students or middle-level professionals, and the workpace of all, depending on the esprit of the agency, can be leisurely or brisk.[34]

8.1 Project Design

Having erected our analytic framework, we turn to the comparative analysis to see what lessons can be learned from the performance of the five projects. The first issue is that of project design and its structural relationship to various categories of benefit and cost.

If the benefit calculus employed in this study has even a rough correspondence to the underlying pattern of income and expenditure flows, it teaches a number of simple but powerful lessons for constructing successful projects. Our data here, shown in Table 31, are the most likely case estimates taken from the benefit synopses expressed as a percentage of project cost.

The first observation is that the gross benefit level of all these projects is comparatively high. More to the point, for choosing among program alternatives these levels of gross benefits compare very favorably with results achieved in lending

---

[34]In theory, there are interactions between all three sets of determinants--useful inputs, producer responsiveness, delivery cost. The more complementary the technical assistance supplied through the delivery system, the greater the range of inputs that will prove useful, the higher the output elasticity of the producers, and the fewer the defaults. Thus the more costly delivery system could result in more benefits, lower default costs, and a higher benefit-cost ratio. Such hoped-for outcomes provide the rationale for bureaucratic expansionism in the form of multi-input, integrated projects. However, all the evidence is against extensive interaction.

schemes that serve larger scale, nontraditional (modern) enterprise[35] and in purely technical assistance projects that serve traditional, rural industry.[36]

Table 31. Project Design and the Structure of Benefits (benefit components as a percentage of total cost)

Item	PfP	UNO	IDH	DDF (M)	DDF (S)	FDR
Direct Value Added[a]	18.1	63.6	33.6	393.8	397.4	51.5
Training Benefit	0.3	1.2	3.6	8.1	-	0.4
Distributional Benefit	10.3	2.8	9.7	42.0	197.8	3.8
External Economies						
Forward Demand Linkage	4.9	10.8	29.0	89.0	76.0	11.0
Backward Linkage	10.4	14.1	31.9	20.9	-	26.6
Consumer Benefit	53.6	-	-	-	140.0	-
Diversion Benefit	4.3	40.2	16.7	-	6.0	12.1
Total Benefit	101.9	132.7	124.5	553.8	817.2	105.4
Total Cost[b]	100.0	100.0	100.0	100.0	100.0	100.0

[a]Wages, profit, interest, rent less labor opportunity cost.
[b]Capital erosion from inflation accounts for the following proportion of total cost: PfP = 4%, UNO = 34%, IDH = 10%, DDF(M) = 8%, DDF(S) = 14%, and FDR = 94%.

A second observation is related to the source of project benefits. From our sample of six projects it would seem that extremely successful ones such as the two DDF schemes are successful by virtue of their direct impact on client firms. One

[35]Jacob Levitsky, Assessment of IBRD SSE Lending Project (Washington, D.C.: IBRD, July 1982).

[36]Peter Kilby, "Evaluating Technical Assistance," World Development (March 1979).

can infer from this that very successful projects are unlikely to go unnoticed. The same is not true for a much larger number of moderately succesful projects of which the other four are prototypes. These ventures are transformed from being very substantial losers to being winners by virtue of their unseen external economies. Herein lie some important and not so obvious lessons for project design.

The first lesson concerns the type of economic activity selected as a target for assistance. By a considerable margin, the largest single category of small-scale enterprise is retail trading. Because of their number, these firms have frequently been the object of assistance programs. Although they have other advantages and disadvantages from a development point of view, they suffer the great handicap of not generating backward linkages, one of the major contributers to a favorable level of benefits. In the case of IDH and FDR, backward linkages alone were equivalent to more than a quarter of the cost of the project; on the other hand, extremely small backward linkages, because of a heavy weighting of trading activity, hurt PfP and DDF. Retail trade is but the extreme case of variance in backward linkage. Empirically based estimates of these interindustry purchases should be one of the criteria in choosing target activities.

A second lesson is revealed by an examination of the consumer benefit. When projects are designed to assist producers in localized economies, as in Diapaga and Fada in Upper Volta, or the concentrated lending to tricicleros in the Dominican Republic, aggregate supply is shifted out relative to market demand. Reported by clients as the undesirable emergence of "cut-throat competition" or "market saturation," it signals a price reduction to the consumer. Because of the consumer surplus and the fact that none of the potential benefit can be lost to inefficiency, the benefit to consumers exceeds the benefit producers would have retained without the price reduction. And, as can be seen in the two so-designed projects here, the benefit is very large.

The third element in our external economy category, the final demand linkage, contrasts with the other two in that it is directly proportional to value added in the client firms, helping very successful projects yet further, as in DDF, and doing little to aid those that most need it. The only case in which this would not be true would be one where the receivers of "profit" had very different personal expenditure patterns than wage receivers. Here the final demand linkage would vary with the relative size of the two shares.

There are a number of lessons to be gleaned from an examination of the expenditure side of the equation. It is in the nature of things that flexible, exploratory stage I projects

like PfP have high costs and a small proportion of expenditure going to the benefit-creating loan fund. In contrast, stage III projects that have benefited from much prior testing (such as DDF) have a modest expenditure share for local staff carrying out well-defined, limited tasks and a large expenditure share devoted to high-payoff lending. Inspection of accounting procedures also reveals the negative leverage of loan defaults: on the one hand, there are fewer loans generating benefits in the numerator and, on the other hand, unrecoverable loans are added on to the costs in the denominator. Finally, although unfavorable with respect to equity considerations, repeat loans and larger, long-term loans reduce delivery cost per dollar lent per year and thereby raise the benefit-cost ratio by lowering the denominator.

8.2 External Environment

A second area where we may draw some lessons has to do with the impact of external factors on benefit-cost performance. We divide this topic into two parts, inflation and all other external factors.

Inflation has a "real" aspect and a "financial" aspect. The real aspect is that it changes relative prices in the economy because all prices do not rise identically. This means that the input prices (raw materials, labor) that our microentrepreneurs pay will almost surely rise faster or slower than the prices they can charge for their output, thus altering the inherent profitability of production. If the inflation is caused in large measure by import restrictions that raise the relative price of goods that are competitive with small-scale enterprise products, it can lead to expanded sales and larger unit profit margins. If it impinges more on spares and raw material costs, the reverse transpires. It is generally thought that inflation of the first type is more prevalent, so that microenterprises should be beneficiaries of rising average prices. The information available from the five case studies does not provide clear evidence one way or the other.

The financial aspect of inflation is far less ambiguous and in virtually all cases powerfully detrimental to project performance. It arises because governments and PVOs are reluctant to set interest charges that are, at a minimum, equal to the rate of inflation. Said differently, inflation gives rise to negative real interest rates and high rates of inflation give rise to very large negative real interest rates. The latter has two deleterious effects. First, it imposes additional costs on the project in the form of correcting for capital erosion. Second, it creates an incentive for the borrower to divert loan proceeds away from designated investment to a nonproductive inflation

hedge. Thus a rate of inflation that exceeds the project's lending interest rate adds to costs and reduces measured benefits, and, of course, negative real interest rates discourage savings in all sectors of the economy.

As seen in Table 32, inflation has added immense cost to UNO and FDR. In the case of FDR the $33 million capital erosion cost alone equals nine-tenths of the aggregate benefit. Moderate rates of inflation in Upper Volta and the Dominican Republic greatly aided the relative performance of these two projects. The lesson is clear: unless the project designers are prepared to charge interest rates from 40 percent to 100 percent as required, lending projects should not be located in inflationary economies.

Judith Tendler notes in her evaluation report that the group she surveyed, food retailers, did not expand sales.[37] She also noted that interest rates paid to depositors in commercial banks exceeded UNO's 28 percent loan rate and that some UNO borrowers might be tempted to dispense with their investment and collect the interest differential, as has evidently been done with agricultural credit. An examination of those rates reveals that from 1978 to 1982 depositors could have earned the following: 58 percent, 57 percent, 96 percent, 110 percent, and 109 percent, respectively.[38] This yields a risk-free, work-free rate of return from diverting UNO funds ranging from 30 percent to 80 percent. It is hard to resist the conclusion that alert businessmen did so, and on a large scale.

Other external factors share the same status as the real effects of inflation: their impact on project performance cannot be measured because, given our small sample, "all other things" are not "constant." Do microenterprise projects perform better in the higher income countries? Are they more likely to succeed in an expansionary or contractionary period? Does the opening up of new roads widen local markets for small-scale enterprise more than it attracts competition from outside producers? Do microenterprises fare better in "open" or "closed" economies as measured by the import-GDP ratio?

Table 33 provides economic and social statistics comparing the structures of the five project countries, per capita income and population, and, finally, various performance indices on savings, investment, growth in GDP, food production, and the

---

[37]Tendler, Ventures.

[38]Morgan Guarantee Trust, World Financial Markets, for the month of December.

external sector. Returning to our first question, do microenterprise projects perform better in high-income countries, the soft answer that we might infer from Table 33 is "not exactly." The best performances are from IDH and DDF, which occupy a middle position. While the market share of informal sector goods is high in very low-income countries, this favorable factor is offset by entrepreneurial limitations; in Brazil exactly the reverse holds. One might argue that it is in the $500 to $1,500 per capita income range that the balance of these two opposing forces is most propitious to microenterprise expansion.

Table 32. Inflation and Indirect Project Costs

Annual Inflation Rates
(percentages)

Year	Upper Volta	Brazil	Honduras	Dominican Republic	Peru
1972-74[a]	-	20.2	-	-	-
1975-76[a]	-	36.4	-	-	28.6
1977	-	43.7	8.4	-	38.1
1978	8.2	38.7	6.2	-	57.8
1979	15.0	42.7	12.5	-	66.7
1980	12.3	52.7	15.6	7.5	59.2
1981	7.5	105.2	10.2	7.2	75.4
1982	-	-	9.6	-	-

Costs From Capital Erosion[b]
(thousands of U.S. 1982 dollars)

Year					
1972-74[a]	-	87.8	-	-	-
1975-76[a]	-	401.0	-	-	10.6
1977	-	153.8	0.4	-	464.8
1978	1.2	133.7	4.2	-	1,449.2
1979	9.2	76.3	25.4	-	3,689.7
1980	11.5	327.7	37.5	3.8	5,708.6
1981	5.8	797.7	16.7	13.8	8,706.1
1982	-	-	17.1	-	13,326.0
Total	27.7	1,997.0	98.3	17.6	33,355.0

[a]Average annual rate.
[b]Value of loans outstanding x (1 - 1/1 + inflation rate).

What about GDP growth rates? The decade average growth reported in Table 33 does not provide much help. The local economies in which most of the projects operated were experiencing expansion until about 1978-1979, followed by contraction. The evaluation reports indicate that UNO and FDR in Brazil and Peru were strongly affected in both directions whereas DDF and IDH did not turn down with their national economies. The effects of the downturn on PfP in Upper Volta appear to have been more than offset by another external factor, the opening up of new roads and hence new markets in outlying villages. The effect of an improving transportation network cuts in both directions for regional producers, opening up new local markets but also being opened up to high-quality "import" competition from small-scale enterprise producers in the country's major urban areas. The market-widening effects dominate in the short run, the competitive effects in the long run.

The last word in this tentative discussion of the effects of external factors on project success is to note those macroeconomic parameters that, rather surprisingly, do not seem to have any discernible impact. These include the strength of the food-producing agricultural sector, the country's capacity to save, the openness of the economy to imports, and the health of the merchandise balance of trade. Perhaps a larger sample and evaluation reports more sensitive to these variables would vindicate the a priori logic that argues that these factors should be of consequence.

8.3 Credit Delivery System

We will define the credit delivery system as encompassing all those activities that start with the lender first gaining knowledge about the universe of potential borrowers to final repayment of the loan or liquidation of collateral.

In the case of UNO (pre-1981), these activities were mostly carried out by the lender and included a neighborhood census of microfirms (one worker covering 15 firms a day), a selection visit to the firm to see if it fit UNO's criteria and was interested in credit, a diagnostic visit, and an accounts-building visit. The last was a requirement of the participating banks, which provide the funding under a guarantee scheme. Because inflation cuts one-third to one-half off the real amount to be repaid, because repeat loans are available for those with good records, and because serious delinquency results in the loss of one's national consumer credit rating, the need for postloan supervision is minimal--two visits on average.

Table 33. External Parameters

Category	Upper Volta	Brazil	Honduras	Dominican Republic	Peru
Labor in Agriculture 1980 (%)	89	30	63	49	40
Life Expectancy, 1980 (yrs.)	39	63	58	61	58
Adult Literacy, 1977 (%)	5	76	60	67	80
Enrolled Secondary School, 1979 (%)	3	32	21	28	50
Population, mid-1981 (millions)	6.3	120.5	3.8	5.6	17.0
GNP Per Capita, 1981 (US$)	240	2,220	600	1,260	1,170
Savings/GDP, 1981 (%)	-11	20	18	14	14
Gross Investment/GDP, 1982 (%)	16	20	24	24	19
Growth in GDP, 1970-1981 (%)	3.6	8.4	3.8	6.3	3.0
Index of Food Production, 1978-1980 (1969-1971 = 100)	95	117	82	94	83
Exports/GDP, 1980 (%)	14	9	37	17	24
Imports/GDP, 1980 (%)	34	11	46	20	13

Source: IBRD, World Development Report 1983.

In other delivery systems more of the activity is carried out by the borrower. This is the case in the group-lending schemes (DDF's solidarity groups, PfP's women's credit groups, and Koulouga Cereal Bank) where a portion of both borrower screening and repayment enforcement is done by members of the group. The quasi-religious network used by IDH provides valuable borrower-screening information. Although these borrower-supplied services are "free," if they prove too costly to those who bear them the group breaks down, as happened in Upper Volta.

The most parsimonious delivery system is that of commercial banks, most closely approximated by Peru's FDR. The sequence is as follows: considerable documentation submitted by the applicant, a single on-site visit by a bank technician, deliberation by the branch bank's Loan Committee (10 minutes per loan), postal follow-up on repayment performance, and, where necessary, repossession of loan-financed assets. The delinquency rate in Peru is 8 percent.

The case studies yield several lessons about loan repayment. First, it is important that repayment schedules conform to the time profile of cash flow. Excessively short maturities for IDH and DDF microenterprise loans necessitated payback before the new sales appeared, "automatically" causing arrears. On the other hand, too generous schedules, as illustrated by the DDF tricicleros loans, often will mean that the money has been spent elsewhere when the due date arrives. A second lesson is that a flexible policy on loan repayment, one that takes into account transitory business setbacks, is not a good policy. Once leniency is perceived, no matter how well justified, it soon elicits from a large minority of borrowers calculating behavior that will eventually wreck the entire lending scheme. The 50-percent delinquency rate in Fada, and its rapid reduction to 13 percent in 1982 once tough policies were instituted, is the most dramatic example. Currently, both DDF and IDH are suffering the consequence (arrears of 37 percent and 42 percent, respectively) of a lax enforcement policy. Where the lender has incontrovertible evidence that the borrower's business is suffering, that it is suffering solely because of transitory external circumstances, and that the borrower lacks the means of repayment from other sources of income, then in this comparatively rare instance the appropriate remedy is a rescheduling of the loan. Otherwise the lender's motto must be--reversing the priority widely observed in practice--"to be strict in the short run is to be merciful in the long run." Merciful, because there will be a long run for all to enjoy.

Table 34 summarizes information on various aspects of the lending process for the five projects.

Table 34. Summary of Lending Programs

Item	PFP	UNO	IDH	DDF (M)	DDF (S)	FDR
Years in Operation	3.2	18	3	1.5	1.5	7
Loans Issued ($m)	.3	4.6	.5	.2	.2	42.3
Average Loan ($)	670	1,813	3,216	1,680	191[a]	5,961
Average Maturity (mo)	12	18	24	14	12	36
Interest Charged (%)	10	31	13	12	24	36
Average Inflation (%)	11	50	10	7	7	59
Repayment Arrears (%)	23[b]	na	42	44	33	8
Unrecoverable (%)	9	8	7	19	15	2

[a]These are the loans received by individuals; average loan size to solidarity groups is $1,180.
[b]Does not include rescheduled loans.

Before we leave the subject of delivery system design, we must mention a project not in our sample. The Badan Kredit Kecamatan (BKK) of Central Java in Indonesia suggests that several of the elements we have touched on--reduced information requirements and repeat loans--if taken to an extreme, might do the job all by themselves. One of the world's few self-sustaining small-scale enterprise lending schemes, the BKK has made 2.7 million loans since 1972, totaling $55 million through 1982.[39] Its clients, of whom 60 percent are women, are primarily petty village traders and handicraft workers. The loans are disbursed through 486 branches, each staffed by a cashier and a bookkeeper. The effective annual interest charge is about 60 percent (inflation is 20 percent) and average loan maturity is 5 months. Bad loans run at approximately 6 percent of the portfolio.

[39]Unfortunately, the BKK evaluation report was not available in time for the benefit-cost analysis. All information comes from Susan Goldmark and Jay Rosengard with the assistance of Nancy Straughan, Credit to Indonesian Entrepreneurs: Assessment of the Badan Kredit Kecamatan Program (Washington, D.C.: Development Alternatives, Inc., 1983).

The success of BKK is all the more striking as it appears to violate virtually every cannon of efficient design. Loans are made purely on the basis of character: no inquiry is made concerning the viability of the intended use and no collateral is required. It is a public project (part of local government) and potentially subject to favoritism and political pressures (the subvillage chief approves all loans above $8). No voluntary personnel or student staff (one-third of BKK employees enjoy civil servant status) are used. Borrowers with access to commercial banks are not excluded. The incentive for repayment is the prospect of future, larger loans; the typical client has had a dozen BKK loans.

What dare we conclude from such a stunning performance? Would the BKK model be equally successful for larger loans, for loans involving some fixed capital, for new enterprises? Would it succeed at a much smaller scale? We need more evidence to answer these questions. But what can be said is that the BKK experience re-enforces the central finding of this report that working capital loans for established enterprises represent a single "missing ingredient" with a high real rate of return (more than 40 percent in Indonesia).

8.4 Technical Assistance

Those involved with designing and implementing small-scale enterprise lending schemes hold technical assistance in high regard. It is something to do; it is visible; it seems to make sense. But what is the hard evidence in its support? Perhaps the issue is best addressed in the form of two questions: Does a successful lending program require a supporting effort to strengthen the technical and managerial knowledge of the assisted entrepreneur? Can technical assistance alone--as in the case of some of the activities of UNO and DDF--perceptibly augment the performance of microenterprise units?

Investigation of public lending schemes during the 1960s and 1970s disclosed that many of the recipient firms did not fare well and that managerial limitations were more often the binding constraint than capital shortage. The lessons of this finding, which pertained only to nontraditional ("modern"), small enterprise, have been incorporated into the design of the new lending schemes aimed at the informal sector. The reasonableness of this extension was confirmed by all the research, which shows that microenterprise units seldom employ written records or other elementary forms of management control.

These inferences have proved invalid. The BBK project suggests that finance alone can be adequate. Moreover, the evaluation reports under review suggest that most forms of technical assistance so far tried are not "appropriate inputs" in that they do not have the potential to reduce costs. Granted that measuring the true influence of technical assistance is a slippery business, in all but a few situations both the recipients and the implementers reported that the results were negligible. In the technological area, the PVO generalists lack specialized knowledge. In the projects where students are used--UNO and DDF--their practical knowledge of any kind of commercial enterprise is far less than those they are helping. The standard formulas they expound are found to be time consuming to implement and without benefit. But even for the mature (PfP) or well trained (FDR), the result is no different; the microenterprise does not gain from formal managerial methods, no matter how cleverly adapted to local conditions (PfP's color-coded boxes), simply because its business indeed can be carried in the entrepreneur's head. Written records add to the entrepreneur's vulnerability (claims of relatives and tax collectors) with no compensating gain in profits.

The few exceptions where management assistance was reported to be beneficial had to do with new business (PfP and IDH), and the valued advice was not in bookkeeping or management techniques, but in general planning--working through all the ramifications of a new enterprise. In the few cases where the former was mentioned it was for the largest, nontraditional firms. In all of the projects the initial level of technical assistance has been both curtailed and reoriented.

As indicated in the preceding sections, we believe that virtually all the evidence points to a single missing ingredient, working capital. The success of these lending schemes conforms to an earlier finding, based on a benefit-cost analysis of 11 International Labor Organization/UN Development Program rural industry technial assistance projects.[40] It was found that the multiple-input, integrated projects were largely failures, while the bulk of successful efforts involved uncovering a situation where there was a single missing ingredient. This "missing-ingredient hypothesis" has received more recent confirmation.[41] It would seem that working capital loans are yet another instance that supports the hypothesis.

---

[40]Kilby, "Evaluating Technical Assistance."

[41]See studies cited in Judith Tendler, Turning Private Voluntary Organizations Into Development Agencies: Questions for Evaluation (Washington, D.C.: AID, 1982), p. 135.

8.5 Project Cost and the PVO Contribution

Further attributes of the credit delivery system and administrative costs are provided in Table 35. First, a caution about using these measures without the contextual qualitative information found in the narratives. To relate number of visits, processing time, and documentation to administrative cost, one must also know how many unsuccessful applications absorbed these same services. For instance, this figure is extremely high in the case of UNO. Both with respect to collateral requirements and documentation, the actual level of enforcement often falls far below stated norms.

Table 35. Summary of Credit Delivery Systems

Item	PFP	UNO	IDH	DDF (M)	DDF (S)	FDR
New Ventures[a] (%)	25	nil	71	-	nil	11
Repeat Loans (%)	25	27	-	nil	nil	58
Number of Visits	12	7	20	32	-	1
Processing Time (days)	-	-	30	-	120	110
Collateral[b]	nil	C	P,C	P,C	nil	P,O,C
Documents[c]	F,B,Y	F,B,Y,R	F,B,Y	B,Y,R	nil	F,B,Y,R
Administrative Costs[d]						
Per Loan ($)	1,238	1,249	947	917	56	306
Per $ Lent Per Year (%)	185	58	19	58	27	3

[a]Includes diversification of existing businesses.
[b]Collateral: C = cosigner, P = loan-financed asset, O = owner's personal assets.
[c]Documents: F = feasibility study, B = balance sheet, Y = income statement, R = complete accounting system.
[d]All expenditures, including technical assistance.

Administrative cost per loan or per dollar lent per year must be "adjusted," then, for its differential content across projects for (1) technical assistance, (2) initial startup costs, (3) the proportion of unsuccessful applications, and (4) bad loans. One would expect (3) and (4) to be inversely related. In our six cases, startup costs are greatest in PfP and lowest in DDF and FDR.

Clearly the group-lending mode should be employed wherever it will work. Equally clear is that the necessary conditions are not often present; that is, a well-defined, coherent group; a highly profitable market situation; a technically simple, loan-financed asset that is invulnerable to mismanagement. Or such is what a comparison of the PfP and DDF experiences would indicate. Further empirical research to isolate the minimum set of conditions for successful group lending is a high priority.

Another source of high cost is the use of expatriate staff (salaries, housing, international travel). This is one of the major sources of PfP's high relative cost. In very underdeveloped countries such as Upper Volta, where local management personnel are scarce, one wants to design an extremely simple delivery system that can be staffed locally, if a reasonable level of cost efficiency is ever to be attained.

Given that we have only two non-PVO projects, each of which appears to be exceptional, it is not possible to obtain a fair, overall measure of the comparative performance of PVOs as implementing agencies. However, the case studies permit us to make certain specific observations. First, at a senior level, PVOs employ generalists rather than the more expensive professionals. As described in the UNO evaluation, the former are not only less costly than professionals in business administration, they are also better suited to handling the informal problems of the informal sector. More critically, because of the extra-economic income gained by PVO participants, their services are obtained at a far lower money wage. These same two factors make it possible to recruit and use student labor, achieving further monetary economies. Finally, their nonpecuniary objectives mean that PVO staff interact well with the poor and are motivated to go through the arduous business of seeking them out, organizing them for group lending, and the like. Thus, as the high learning phase of microenterprise lending is completed and the most efficient delivery systems are identified, we would expect PVOs to possess a substantial comparative advantage as the implementing medium for these projects.

BIBLIOGRAPHY

1. PRIMARY SOURCES

Ashe, Jeffrey. Assisting the Survival Economy: The Micro-enterprise and Solidarity Group Projects of the Dominican Republic Foundation. Cambridge, Massachusetts: ACCION International/AITEC, 1982.

Bear, Marshall, Henry Jackelen, Michael Tiller, and Dong Hill. Microenterprise Development in the Urban Informal Sector: Case Studies From Brazil and the Philippines. Washington, D.C.: A.T. International, 1983.

Coelho, Lielson, and Luis Fuenzalida. "An Appraisal of UNO Programs in Bahia and Recife: Preliminary Results." Bahia, Brazil: Universidade Federal da Bahia, May 1980.

Fraser, Peter H., and Bruce A. Tippett. Impact Evaluation: IDH Honduras. Washington, D.C.: U.S. Agency for International Development, 1982.

Goldmark, Susan, Timothy Mooney, and Jay Rosengard. Aid to Entrepreneurs: An Evaluation of the Partnership for Productivity Project in Upper Volta. Washington, D.C.: Development Alternatives, Inc., 1982.

Goldmark, Susan, Jean-Jacques Deschamps, Joseph Recinos, and Beatrix Glover. An Impact Evaluation of the Industrial Bank of Peru's Rural Development Fund. Washington, D.C.: Development Alternatives, Inc., 1982.

Goldmark, Susan, and Jay Rosengard. Credit to Indonesian Entrepreneurs: An Assessment of Badan Kredit Kecamatan Program. Washington, D.C.: Development Alternatives, Inc., 1983.

Lassen, Cheryl A. A Response to the DAI Evaluation of PfP/Upper Volta. Washington, D.C.: Partnership for Productivity, International, 1983.

Schiller, John. Rural Enterprise Development Project: Final Report. Washington, D.C.: Partnership for Productivity, International, 1982.

Tendler, Judith. Ventures in the Informal Sector and How They Worked Out in Brazil. AID Evaluation Special Study No. 12. Washington, D.C.: U.S. Agency for International Development, March 1983.

2. SECONDARY SOURCES

Anderson, Dennis. "Small Industry in Developing Countries: A Discussion of the Issue." World Development, November 1982.

Aryee, George. Small-Scale Manufacturing Activities: A Study of the Interrelationships Between the Formal and the Informal Sectors in Kumasi, Ghana. Geneva: International Labour Office, 1977.

Chuta, Enyinna, and Carl Liedholm. Rural Non-Farm Employment: A Review of the State of the Art. MSU Rural Development Paper No. 4. East Lansing: Michigan State University, 1979.

Davies, Amar, and Yacob Fisseha. The Small Scale Manufacturing Enterprise in Jamaica: Socio-Economic Characteristics and Constraints. MSU Rural Development Paper No. 16. East Lansing: Michigan State University, 1981.

Farbman, Michael, ed. The PISCES Studies: Assisting the Smallest Economic Activities of the Urban Poor. Washington, D.C.: U.S. Agency for International Development, 1981.

Fowler, D.A. The Informal Sector of Freetown (Sierra Leone). Geneva: International Labour Office, 1978.

Haggblade, Steve. "Africanization From Below: The Evolution of Cameroonian Saving Societies Into Western-Style Banks," Rural Africana, Fall 1978.

Jurado, Gonzalo, and Judy Castro. The Informal Sector in the Greater Manila Area, 1976: An Overview. Geneva: International Labour Office, 1978.

Kilby, Peter. "Evaluating Technical Assistance," World Development, March 1979.

Kilby, Peter. Small Scale Industry in Kenya. MSU Rural Development Paper No. 20. East Lansing: Michigan State University, 1982.

Levitsky, Jacob. Assessment of IBRD SSE Lending Project. Washington, D.C.: International Bank for Reconstruction and Development, 1982.

Leidholm, Carl, and Enyinna Chutta. The Economics of Rural and Urban Small-Scale Industries in Sierra Leone. MSU African Rural Economy Paper No. 14. East Lansing: Michigan State University, 1976.

Sethuraman, S.V., ed. The Urban Informal Sector in Developing Countries. Geneva: International Labour Office, 1981.

Stallman, Judith I., and James W. Pease. Rural Industrialization Policy and Programmes in Honduras: A Preliminary Assessment, Geneva: International Labour Office, 1980.

Tendler, Judith. Turning Private Voluntary Organziations Into Development Agencies: Questions for Evaluation. Washington, D.C.: U.S. Agency for International Development, 1982.

Wilcock, David, and Enyinna Chuta. "Employment in Rural Industries in Upper Volta," International Labour Review, July-August 1982.